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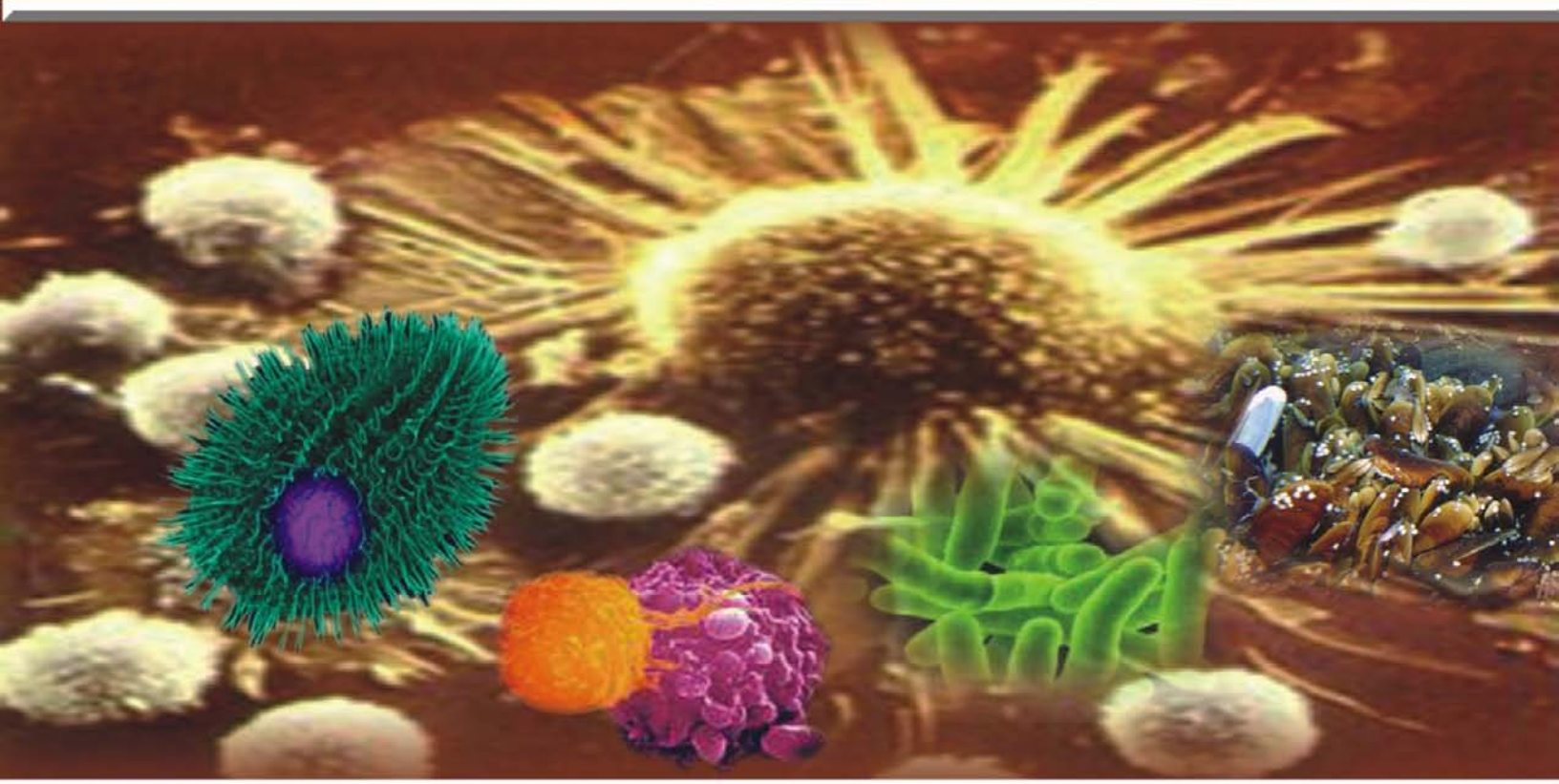
MCQs in Microbiology



G. Vidya Sagar

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MCQs
IN
MICROBIOLOGY

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MCQs in Microbiology

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NEW AGE INTERNATIONAL (P) LIMITED, PUBLISHERS

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ISBN (13) : 978-81-224-2931-2

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4835/24, Ansari Road, Daryaganj, New Delhi - 110002
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This book is dedicated to

PROF. B.G. SHIVANANDA

Principal

Al-Ameen College of Pharmacy

BANGALORE

For his Herculean efforts in bringing

API to a high pedestal

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FOREWORD

Multiple choice questions (MCQs) test a candidates ability to apply his or her knowledge acquired during the regular course of study. Framing a question paper based on MCQs is time consuming but evaluating the answers is easy.subjectiveness of the examiner associated with evaluation of essay type of answers is inherent in the evaluation process & depends upon several variables such as hand writing, methods of presentation etc. These variables do not exist during evaluation of answers based on MCQs.

I am of the opinion that for the examination system at the undergraduate level, the entire testing of theoretical knowledge should be MCQ based since the evaluation can be computerized & human bias can be largely eliminated.

In this book, the multiple choice questions have been prepared with great care such that the questions framed are precise & clear enabling the reader to make correct choices. A wide coverage of topics is given.

I strongly recommend this book for all related to Microbiology & College Libraries.

PROF DR. KANTI GOR
Vice Chancellor

K.S. K. V. Kachchh University
Bhuj, Gujarat

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PREFACE

The book is primarily meant for students appearing for PG competitive examinations. In USMLE, GATE, AFMC, AIIMS & other Medical, Paramedical entrance examinations for admissions to PG Programme, Microbiology is one of the important component of the syllabus.

The main objective of this book is to help students to review their knowledge of Microbiology acquired through standard textbooks. A sound knowledge of Microbiology is essential for students of Medicine, Pharmacy, Dentistry & Nursing for understanding the subject with logical reasoning. This book is specially designed to complement any standard microbiology textbook and to provide the students with a feedback on their progress & an opportunity to improve. Thus the book can serve as a self assessment guide.

With the explosion of knowledge in medical sciences, examinations in all faculties (Medicine, Pharmacy, Dentistry & Nursing) is completely becoming MCQ oriented because this system of assessment is more accurate, reliable & quicker. A welcome trend in this direction is already discernible

Both the teachers & students of microbiology will find this book useful. A quick persuation of the questions will provide evidence that the book intends to stimulate reasoning

Suggestions & criticism about the book are welcome.

G. Vidya Sagar

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ACKNOWLEDGEMENTS

It gives me pleasure to acknowledge with deep appreciation for all those who have extended their co-operation during the preparation of the book.

- **Prof. Dr. B. Suresh**
  President, Pharmacy Council of India
- **Sri. Harish Padh**
  Director, Sri B.V. Patel PERD centre
  Ahmedabad, Gujarat
- **Prof. Dr. Ajay K. Saluja**
  A.R. College of Pharmacy
  Vallabh Vidyanagar
  Gujarat
- **Dr. E. Bhanoji Rao**
  Principal, Rolland Institute of Pharmaceutical Sciences
  Behrampur, Orissa
- **Dr. K. Senthil Kumar**
  Principal, Padmavathy College of Pharmacy
  Dharmapuri, Tamilnadu

Finally, I express my gratitude to Mr. Soumya Gupta, MD, Manager, New Age International (P) Limited, New Delhi, for his encouragement and support.

- Author

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CHAPTER 1

HISTORY OF MICROBIOLOGY

1. According to Pasteur statements which one of the following is true

a. Living organisms discriminate between stereoisomers
b. Fermentation is a aerobic process
c. Living organisms doesn't discriminate between stereoisomers
d. Both a and b

2. "I found floating therin earthly particles, some green streaks, spirally wound serpent-wise, and orderly arranged, the whole circumstance of each of these streaks was abut the thickness of a hair on one's head".... These words are of

a. Leeuwenhoek b. A. Jenner
c. Pasteur d. Koch

3. The principle light- trapping pigment molecule in plants, Algae, and cyanobacteria is

a. Chlorophyll a b. Chlorophyll b
c. Porphyrin d. Rhodapsin

4. During Bio Geo chemical cycle some amount of elemental carbon was utilized by the microorganisms. The phenomenon is called as

a. Dissimilation
b. Immobilization
c. Decomposition
d. Neutralization

5. Who demonstrated that open tubes of broth remained free of bacteria when air was free of dust.

a. Abbc Spallanzani b. John Tyndall
c. Francisco Redi d. Pasteur

6. Reverse isolation would be appropriate for

a. a patient with tuberculosis
b. a patient who has had minor surgery
c. a patient with glaucoma
d. a patient with leukemia

7. The symptome " general feeling of illness and discomfort " is called

a. Cystitis b. Malaise
c. Anaphylactic shock d. Arthritis

8. On soybean which of the following forms symbiotism

a. Azatobactor paspali
b. Rhizobium
c. Nostoc
d. Bradyrhizobium

9. Who provide the evidence that bacteriophage nucleic acid but not protein enters the host cell during infection

a. Alfred D.Hershey & Leonard Tatum in 1951.
b. Alfred D.Hershey & Zindar Lederberg in 1951.
c. Alfred D.Hershey & Martha Chase in 1952.
d. Alfred D.Hershey & Macleod in 1952.

10. Spirulina belongs to

a. Xanthophyceae b. Cyanophyceae
c. Rhodophyceae d. Pheophyceae

11. The first antibody to contact invading microorganisms was

a. IgG b. IgM
c. IgA d. IgD

12. The light emitted by luminescent bacteria is mediated by the enzyme

a. Coenzyme Q
b. Luciferase
c. Lactose dehydrogenase
d. Carboxylase reductase

13. Pick out the vector using in human Genome project

a. Phagemid vector
b. Yeast artificial chromosomes
c. Cosmid vectors
d. Yeast episomal plasmids

14. Salt and sugar preserve foods because they

a. Make them acid
b. Produce a hypotonic environment
c. Deplete nutrients
d. Produce a hypertonic environment

15. In a fluorescent microscope the objective lens is made of

a. Glass b. Quartz
c. Polythene d. None of these

16. Fixation of atmospheric nitrogen is by means of

a. Biological process b. Lightining
c. Ultraviolet light d. All of the above

17. Which one of the following fungi is the most serious threat in a bone marrow transplant unit?

a. Candida albicans b. Aspergillus
c. Blastomyces d. Cryptococus

18. Direct microscopic count can be done with the aid of

a. Neuberg chamber b. Anaerobic chamber
c. Mineral oil d. Olive oil

19. The image obtained in a compound microscope is

a. Real b. Virtual
c. Real inverted d. Virtual inverted

20. Enzymes responsible for alcoholic fermentation

a. Ketolase b. Zymase
c. Peroxidase d. Oxidase

21. Which type of spores are produced sexually?

a. Conidia b. Sporangiospores
c. Ascospores d. None of these

22. Bacterial transformation was discovered by

a. Ederberg and Tatum
b. Beadle and Tatum
c. Griffith
d. None of these

23. Father of microbiology is

a. Louis Pasteur b. Lister
c. A.V. Leeuwenhock d. Robert Koch

24. The antiseptic method was first demonstrated by

a. Lwanowski b. Lord Lister
c. Edward Jenner d. Beijerinck

25. Small pox vaccine was first discovered by

a. Robert Koch b. Louis Pasteur
c. Lister d. Edward Jenner

26. The term mutation was coined by

a. Pasteur b. Darwin
c. Hugo devries d. Lamark

27. Compound microscope was discovered by

a. Antony von b. Pasteur
c. Johnsen & Hans d. None of these

28. Father of Medical Microbiology is

a. Pasteur b. Jenner
c. Koch d. A.L.Hock

29. Disease that affects many people at different countries is termed as

a. Sporadic b. Pandemic
c. Epidemic d. Endemic

30. Prophylaxis of cholera is

a. Protected water supply
b. Environmental sanitation
c. Immunization with killed vaccines
d. All of these

31. In electron microscope, what material is used as an objective lense?

a. Magnetic coils
b. Superfine glass
c. Aluminium foils
d. Electrons

32. The main feature of prokaryotic organism is

a. Absence of locomotion
b. Absence of nuclear envelope
c. Absence of nuclear material
d. Absence of protein synthesis

33. The stalked particles on the cristae of mitochondria are called

a. Glyoxysomes b. Peroxisomes
c. Oxysomes d. Spherosomes

34. Antiseptic methods were first introduced by

a. Lord Lister b. Iwanowski
c. Beijernick d. Edward Jenner

35. Kuru disease in Humans is caused by

a. Bacteria b. Viroides
c. Prions d. Mycoplasma

36. A mutation that produces termination codon is

a. Mis-sense mutation
b. Neutral mutation
c. Non-sense mutation
d. Reverse mutation

37. During conjunction the genetic material will be transferred through

a. Cell wall b. Medium
c. Pili d. Capsule

38. Antiseptic surgery was discovered by

a. Joseph Lister b. Ernest Abbe
c. Pasteur d. Beijerink

39. Tuberculosis is a

a. Water borne disease
b. Air borne disease
c. Food borne disease
d. Atthropod borne disease

40. Phagocytic phenomenon was discovered by

a. Louis Pasteur b. Alexander Fleming
c. Metchnikof d. Robert Koch

41. Meosomes are also known as

a. Mitochondria
b. Endoplasmic reticulum
c. Plasmids
d. Chondroids

42. Hybridoma technique was first discovered by.

a. Kohler and Milstein
b. Robert Koch
c. 'D' Herelle
d. Land Steiner

43. The minimum number of bacteria required to produce clinical evidence of death in a susceptible animal under standard condition is called

a. LD_{50} b. ID
c. MLD d. All of these

44. In Electron Microscope source of electrons is from

a. Mercury lamp b. Tungsten metal
c. both a and b d. None of these

45. Griffith (1928) reported the phenomenon of transformation first in

a. H. influenzae b. Bacillus species
c. Pneumococci d. E.coli

46. The resolution power of the compound microscope is

a. 0.2 micron b. 0.2 millimeter
c. 0.2 Angstrom units d. 0.2 centimeter

47. The capacity of a given strain of microbial species to produce disease is known as

a. Pathogen b. Virulence
c. Infection d. None of these

48. Monoclonal antibodies are associated with the name of

a. Burnet b. Medwar
c. Milstein kohler d. Owen

49. Lederberg and Tatum (1946) described the phenomena of

a. Conjunction b. Transformation
c. Mutation d. Plasmids

50. Hanging drop method for motility study was first introduced by

a. Robert Koch b. Louis Pasteur
c. Jenner d. Leeuwenhock

51. Electron microscope gives magnification upto

a. 100 X b. 2000 X
c. 50,000 X d. 2,00,000 X

52. Term vaccine was coined by

a. Robert Koch b. Pasteur
c. Needham d. None of these

53. The inventor of Microscope is

a. Galileo b. Antony von
c. Pasteur d. Koch

54. First Pasteur conducted fermentation experiments in

a. Milk b. Food material
c. Fruit juices d. Both a and c

55. Modern concepts of chemotherapy was proposed by

a. Paul Ehrlich b. Joseph Lister
c. Elie Metchnikoff d. None of these

56. The role of phagocytosis was discovered by

a. Paul Ehrlich b. Joseph lister
c. Elie Metchikoff d. Pasteur

57. L – forms are discovered by

a. Klein Berger
b. Louis Pasteur
c. Robert Koch
d. Antony von Leeuwenhock

58. The causative organism of rocky mountain spotted fever was first described by

a. Howard Ricketts b. da Rocha-lima
c. Both a and b d. Robert Koch

59. The term bacteriophage was coined by

a. De'Herelle b. F.W. Twort
c. Beijernick d. Jwanosky

60. Viral infection of bacteria was discovered by

a. De'Herelle b. F.W. Twort
c. Beijernick d. Jwanoksy

61. Eye cannot resolve any image less than

a. 1ìm b. 2ìm
c. 7ìm d. 5ìm

62. Compound Microscope was discovered by

a. A.V. Lewenhoek b. Pasteur
c. Janssen and Hans d. None of these

63. Electron Microscope was discovered by

a. Prof. Fritz b. Janssen and Hans
c. Knoll and Ruska d. None of these

64. Magnification range of light microscope is

a. 1000x – 5000x b. 1000x – 2000x
c. 500x – 1000x d. None of these

65. Condensation of light in light Microscope is by

a. Objective b. Condensor
c. Ocular d. All of these

66. Light gathering capacity of Microscope is called

a. Numerical aperture b. Angular aperture
c. Both a and b d. None of these

67. If 10x and 40x objectives are used (air is the medium), the numerical aperture is

a. 1.5 b. 2.0
c. 1.0 d. 1.8

68. The ability of Microscope to distinguish two objects into two separate objects, is called.

a. Resolving power b. Wave length
c. N.A. d. None of these

69. Limit of resolution of compound microscope is

a. 0.018 A° b. 0.1 mm
c. 5 ìm d. 1 mm

70. Source of light in fluorescence microscopy is from

a. Mercury lamp b. Sunlight
c. Both a and b d. None of these

71. Who perfected a magnetic lens in 1927

a. Gabor b. Broglie
c. Busch d. None of these

72. The magnefication power of electron microscope developed by Knell and Ruska is

a. 10,000x b. 12,000x
c. 15,000x d. 20,000x

73. In electron microscope source of electrons is from

a. Mercury lamp b. Tungsten metal
c. Both a and b d. None of these

74. The electron passed out from the specimen are called

a. Primary electrons b. Secondary electrons
c. Tertiary electrons d. None of these

75. Mycorrhiza was first observed by

a. Funk b. Frank
c. Fisher d. Crick

76. The transfer of genetic material during transformation is proved basing on Griffith's experiment by

a. Avery Macleod & Mc.Carthy
b. Lederberg & Taulum
c. Zinder & Lederberg
d. Watson & Crick

77. Phagocytic theory was proposed by

a. Louis Pasteur b. Elie Metchnikoff
c. Behring d. Widal

78. Anaphylaxia was first observed by

a. Parter & Richet b. Coombs
c. Gell d. None of these

79. Primary mediators in anaphylaxis

a. Histamine b. Seratonin
c. Heparin d. All of these

80. Arthus reaction was discovered by

a. Marrice Arthus b. Von Perquit
c. Richet d. Porter

81. Serum sickness reaction was discovered by

a. Marrice Arthus b. Von perquit
c. Richet d. Porter

82. Hybridoma technique was developed by

a. Kochler & Milston b. Niel's Jerne
c. Both a and b d. None of these

83. Disease that effects many people at different countries is termed as

a. Sporadic b. Pandemic
c. Epidemic d. Endemic

84. If the vectors transmit the infection mechanically they are called

a. Biological vectors
b. Mechanical vectors
c. Biological reservoir
d. Both a and c

85. If a person can be infected by direct contact with infected tissue of another person, it is termed as

a. Indirect contact transmission
b. Attachment
c. Direct contact transmission
d. None of these

86. Reduction of virulence is known as

a. Exaltation b. Attenuation
c. Both a and b d. None of these

87. Enhancement of virulence is known as

a. Exaltation b. Attenuation
c. Both a and b d. None of these

88. The virulence of a pathogen is usually measured by

a. LD b. MLD
c. ID d. All of the above

89. The lethal dose required to kill 50% of the lab animals tested under standard called

a. ID b. LD_{50}
c. ID_{50} d. MLD

90. The most important virulence factors are

a. Adhesions b. Invasiveness
c. Toxigenicity d. Enzymes
e. All of the above

91. The ability of a pathogen to spread in ths host tissues after establishing the infection is known as

a. Adhesion b. Invasiveness
c. Toxigenicity d. None of these

92. Which is the following enzyme acts as a spreading factor?

a. Hyaluronidase b. Coagulase
c. Catalase d. DNase

93. Vibrio Cholerae was discovered by

a. Koch b. Metchnikoff
c. John Snow d. Virchow

94. E.coli was first isolated by

a. Louis Pasteur b. Escherich
c. Shiga d. Robert Koch

95. Mycobacterium tuberculosis was first discovered by

a. Robert Koch b. Edward Jenner
c. Louis Pasteur d. None of these

96. Mycobacterium lepree was discovered by

a. Robert Koch b. Hansen
c. Edward Jenner d. Louis Pasteur

97. Streptococcus pneumoniae was isolated by

a. Robert Koch
b. Edward Jenner
c. Antony von Leewenhock
d. Louis Pasteur

98. B.anthracis was isolated by

a. Louis Pasteur
b. Robert Koch
c. Antonyvon Leewenhok
d. None of these

99. Staphylococcus aureus was isolated by

a. Rosenbach
b. Louis Pasteur
c. Passet
d. Sir Alexander Ogston

100. Pseudomonas aeruginosa was first named

a. Schroeter and Gessard
b. Robert Koch
c. Louis Pasteur
d. Edward Jenner

101. T. pallidum was discovered by

a. Robert Koch
b. Schaudinn and Hoffman
c. Louis Pasteur
d. Edward Jenner

102. Neisseria gonorrhoeae was first described by

a. Neisser in 1879 b. Pasteur in 1878
c. Robert Koch d. None of these

103. Rh factor of the blood was discovered by scientist

a. Louis Pasteur
b. Landsteiner and Weiner
c. Janskey
d. Moss
e. None of these

104. Trepanema pallidum was discovered by

a. Schaudinn and Hoffman
b. Louis Pasteur
c. Burgey
d. Laennec
e. None of these

105. Fluroscent substance used in fluorescent microscopy are

a. Quinine sulphate b. Auramine
c. All of these d. None of these

ANSWERS

1. a	2. a	3. a	4. b	5. b	6. a
7. b	8. d	9. c	10. b	11. b	12. c
13. b	14. d	15. c	16. d	17. b	18. a
19. b	20. b	21. c	22. a	23. c	24. b
25. d	26. c	27. c	28. c	29. b	30. b
31. a	32. b	33. b	34. a	35. c	36. c
37. c	38. a	39. b	40. c	41. d	42. a
43. c	44. b	45. c	46. a	47. b	48. a
49. a	50. d	51. d	52. b	53. b	54. c
55. a	56. c	57. a	58. c	59. a	60. b
61. d	62. c	63. c	64. b	65. b	66. a
67. c	68. a	69. b	70. a	71. a	72. b
73. b	74. b	75. b	76. a	77. b	78. a
79. d	80. a	81. b	82. c	83. a	84. b
85. c	86. b	87. a	88. d	89. b	90. e
91. b	92. a	93. b	94. b	95. a	96. b
97. d	98. b	99. b	100. a	101. b	102. b
103. b	104. a	105. c			

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CHAPTER 2

BACTERIA AND GRAM STAINING

1. Cold like symptoms are caused by which bacteria

a. Pseudomonas
b. E.coli
c. Haemophilus influenza
d. Haemophilus streptococcus

2. In Streptococcus fecalis, the conjugation takes place at

a. Pili
b. Cell membrane
c. Cell wall
d. Flagella

3. The infected mad dogs may contain

a. Nergi bodies
b. Niagri bodies
c. Negri bodies
d. Neisser bodies

4. What disease the Nesser will produce?

a. Mumps
b. Rubella
c. Polio
d. Measles

5. Rancidity in spoiled foods is due to

a. Lipolytic organisms
b. Proteolytic organisms
c. Toxigenic microbes
d. Saccharolytic microbes

6. The Baterium that is most commonly used in genetic engineering is

a. Escherichia
b. Klebsiella
c. Proteius
d. Serratia

7. The functions of plasmid are

a. DNA replication
b. Protein synthesis
c. Cell wall synthesis
d. None of the above

8. Mycoplasmas are bacterial cells that

a. Fail to reproduce on artificial meida
b. Have a rigid cell wall
c. Are resistant to penicillin
d. Stain well with Gram's stain

9. The etiologic agent of botulism is a

a. Neurotoxin
b. Endotoxin
c. Enterotoxin
d. All of the above

10. The bacterial cells are at their metabolic peak during

a. Lag phase
b. Log
c. Stationary
d. Decline

11. Protein particles which can infect are called

a. Virons
b. Prions
c. Nucleoida
d. None of these

12. In most of purple bacteria, the light harvesting centers are

a. B 850 & Fe-S
b. B 850 & B 875
c. B 845 & B 875
d. B 850 & B830

13. Endotoxin produced by gramnegative bacteria is present in

a. Peptidoglycan b. Lippolysacharide
c. Theichoic acid d. Inner membrane

14. Which one of the following was Gram-negative, chemolithotrophic bacteria?

a. Sidero coccus b. E.coli
c. Spirellum d. Mycoplasms

15. The mode of reproduction which occurs in mycoplasma is

a. Budding b. Bursting
c. Binary fission d. Binary fusion

16. Which one of the following is about Herpes viruses?

a. Icosahedral, with envelope, ds DNA
b. Polyhedral with envelope, ds DNA
c. RNA, helical with envelope
d. ds DNA, brick shape

17. Which one of the following produce typical fried egg appearance colonies on solid media?

a. Mycobacteria b. Mycoplasts
c. Mycoplasms d. Bacteroides

18. An organism that is osmophilic and has a specific requirements for sodium chloride resembles

a. Halophile b. Basophile
c. Barophile d. Xerophile

19. A population of cells derived from a single cell are called

a. Monclonal cells b. Clones
c. Protoplasts d. Sub culture

20. Hetrolactic acid bacteria produce

a. Lactic acid only
b. Lactic acid + H_2O + CO_2
c. Lactic acid + CO_2
d. Lactic acid + alchohol + CO_2

21. In which of the follwing microorganism, conjunction tube was not produced during conjunction process?

a. Thiobaillus thiooxidence
b. T. ferroxidance
c. Tetrahymena thermophila
d. Cryptaporiclium

22. Which of the following is most similar to Rickettsia and Chlamydia?

a. Bdellovibrio b. Clostridium
c. Mycobacterium d. Mycoldaima

23. How would you distinguish pseudomonas species from E-cloi?

a. Gram staining
b. Morphology
c. Glucose fermentation Vs Respiration
d. All of the above

24. Which of the following is pathogenic to humans?

a. Spirogyra b. Cephaleuros
c. Prototheca d. Both b and c

25. Tumer inducing plasmids are extensively used in production of

a. Avirulent phases
b. Single cell proteins
c. Transgenic plants
d. Nitrogen fixing bacteria

26. The viruses that live as parasites on bacteria are

a. Fungi b. Commensels
c. Bacteriophages d. None of these

27. The anthrax disease is most frequently infected from

a. Cattle b. Sheeps
c. Rats d. Both a and b

28. The colonies produced by Pseudomonas on Mac Conkey's medium are

a. Purple colored b. Pink colored
c. Pale colored d. Green colored

29. Staining material of gram positive bacterium is

a. Fast green b. Haematoxylon
c. Crystal violet d. Safranin

30. The pigment present in red algae is

a. Rhodochrome
b. Fucoxanthin
c. Chlorophyll only
d. Chlorophyll + phycobilin

31. During mitosis, synapsis occurs in the phase called

a. Telophase b. Anaphase
c. Prophase d. None of the above

32. Which of the following change is a transition?

a. ATGC'!ATCC b. ATGC'!ATGG
c. ATGC'!AGGC d. None of these

33. Citrus canker is caused by

a. Phytomonas b. Salmonella
c. Lactobacillus d. Hay bacillus

34. Bacteria that are responsible for fermentation of dairy milk are

a. Azetobacter b. Rhizobium
c. Lactobacillus d. Hay bacillus

35. The fungal disease that affect the internal organs and spread through the body are called

a. Mycoses b. Systemic mycoses
c. Mycotoxicosis d. Superficial mycoses

36. The staining technique used to stain the metachromatic granules of Corynebacterium

a. Giemsa stain b. Alberts stain
c. Acid fast staining d. Both a and b

37. The orderly increase in all components of protoplasm of a cell is called

a. Reproduction b. Cell division
c. Growth d. All of the above

38. The causative organism of cholera, i.e., Vibrio show the movement called

a. Gliding movement
b. Darting movement
c. Pseudopoidal movement
d. None of these

39. Erythrocytes will get its ATP energy only by

a. Glycolysis b. Kreb's cycle
c. Electron Transport d. HMP shunt

40. Virus will contain

a. Cell membrane b. Cell wall
c. DNA d. DNA or RNA

41. The bacterial pili mainly contain

a. Carbohydrates b. Lipids
c. Proteins d. Minerals

42. The wonder drug of second world war is produced by

a. Algae b. Fungi
c. Bacteria d. Plants

43. Role of bacteria in carbon cycle is

a. Photosynthesis
b. Chemosynthesis
c. Breakdown of organic compounds
d. Assimilation of nitrogen compounds

44. Centromere is that part of chromosome where

a. Nucleoli are formed
b. Crossing over takes places
c. Chromatids are attached
d. Naking occurs

45. Somatic cell of the adult body are haploid in many except

a. Vertebrates b. Invertebrates
c. Fungi d. Vascular plants

46. Congential diseases are

a. Diseases present at birth
b. Deficiency disease
c. Occur during life
d. Spread from one individual to another

47. The enzyme needed in biological systems for joining two molecules is called

a. Lyases b. Diastases
c. Polymerases d. Hydrolase

48. Meosomes are the part of

a. Plasma membrane b. ER
c. Lysosomes d. Golgi

49. All prokaryotes are surrounded by a cell wall except

a. Mycoplasms b. Sperochetes
c. Actinomycetes d. Methanogena

50. Enzyme hydrolyzing bacterial cell wall

a. Lysozome b. Reductase
c. Protease d. Lysozyme

51. Cows can digest straw because they contain

a. Cellulose hydrolyzing microorganisms
b. Protein hydrolyzing bacteria
c. Lipid hydrolyzing microorganisms
d. Amino acid degrading bacteria

52. The nucleus controls protein synthesis in the cytoplasm by sending

a. Chromatin b. A DNA template
c. m RNA molecule d. A pecialized protein

53. The site of energy production in a cell

a. Micro body b. Chromosome
c. Ribosome d. Mitochondria

54. Thylakoid is present in

a. Mitochondria b. Chloroplast
c. ER d. Golgi apparatus

55. Which one of the following bacteria has found extensive use in genetic engineering work in plants?

a. Clostridum septicum
b. Xanthomonas oriza
c. Bacillus coagulens
d. Agrobacterium tumefaciens

56. Maximum application of animal cell culture technology today is in the production of

a. Insulin b. Interferons
c. Vaccines d. Edible proteins

57. Bacterial ribosomes are composed of

a. Protein and DNA b. Protein and mRNA
c. Protein and rRNA d. Protein and tRNA

58. The potorespiration involves

a. Calvin cycle b. Hatch-Slack cycle
c. Glycolate cycle d. Kreb's cycle

59. Bioleaching is done by

a. Protozoa b. Bacteria
c. Algae d. All of the above

60. Inclusion bodies diagnostic of rabies are called

a. Elementary bodies b. Pascheur bodies
c. Negri bodies d. Guarnieri bodies

61. Which of the following genera is most likely to contain organisms capable of surviving high temperature?

a. Vibrio b. Pseudomonas
c. Torula d. Coxiella

62. The major role of minor elements inside living organisms is to act as

a. Co-factors of enzymes
b. Building blocks of important amino acids
c. Constituents of hormones
d. Binder of cell structure

63. The apparatus used to maintain a continuous culture

a. Chemostat b. Autostat
c. Thermostat d. Both a and c

64. The test used to detect the deamination of the amino acids by bacteria

a. Nessler's reagent test
b. Proteolytic test
c. Lactose test
d. Rose aindole reagent test

65. Diphtheria is caused by

a. Corynebacterium b. Staphylococcus
c. Streptococcus d. None of these

66. Koplic spots observed in the mucous membrane is characteristic feature of the disease

a. Rubella b. Measles
c. Mumps d. Influenza

67. A bacterium containing prophage is called as

a. Lytic b. Lysogen
c. Lytogen d. None of these

68. The most infectious food borne disease is

a. Tetanus b. Dysentery
c. Gas gangrene d. Botulism

69. An example for common air borne epidemic disease

a. Influenza b. Typhoid
c. Encephalitis d. Malaria

70. Vrial genome can become integrated into the bacterial genomes are known as

a. Prophage b. Temperatephage
c. Bacteriophage d. Metaphage

71. Rancidity of stored foods is due to the activity of

a. Toxigenic microbes
b. Proteolytic microbes
c. Saccharolytic microbes
d. Lipolytic microbes

72. Virion means

a. Infectious virus particles
b. Non-infectious particles
c. Incomplete particles
d. Defective virus particles

73. Virulence of the microorganisms can be reduced by

a. Attenuation b. A virulence
c. Inactivation d. Freezing

74. The test used for detection of typhoid fever

a. WIDAL test b. ELISA
c. Rosewaller test d. Westernblotting

75. Bacteriophage capable of only lytic growth is called

a. Temperate b. Avirulent
c. Virulent d. None of these

76. Diphtheria bacillus is otherwise known as

a. Fried-Landers bacillus
b. Kleb's hofflers bacillus
c. Frchs bacillus
d. Koch's bacillus

77. Acridine dyes are more effective against

a. Gram positive b. Gram negative
c. Ricke Hsia d. Mycoplasma

78. In bacteria pigment bearing structures are

a. Chloroplast b. Protoplast
c. Sphaeroplast d. Chromatophores

79. The procedure of differential staining of bacteria was developed by

a. A.H. Gram b. H.C. Gram
c. N.C. Gram d. H.A. Gram

80. Intermediate group of pathogen between bacteria and viruses which are intracellular parasites are called

a. Mucoplasmas b. Rickettsias
c. Prions d. Virusoides

81. Bacillus is an example of

a. Gram positive bacteria
b. Gram negative bacteria
c. Virus
d. Viroid

82. Amoebic dysentery in humans is caused by

a. Plasmodium
b. Paramecium
c. Yeast
d. Entamoeba histolytica

83. Viral genome that can become integrated into bacterial genome is called

a. Prophage b. Temperate phage
c. Bacteriophage d. Metaphage

84. Cytochromes are

a. Oxygen acceptors b. ATP acceptors
c. Electron acceptors d. Protein acceptors

85. The cells having F plasmid in the chromosomes were termed as

a. Hfr b. F^-
c. Hbr d. C^+

86. Recombination process occurring through the mediation of phages is

a. Conjunction b. Transduction
c. Transformation d. Transfection

87. Mordant used in grams staining is

a. Crystal violet b. Iodine
c. Saffranin d. All of these

88. Parasitic form must contain

a. Capsule b. Cell-wall
c. Endospores d. Flagella

89. Gram staining is an example for

a. Simple staining b. Differential staining
c. Negative staining d. None of these

90. Following Cocci are non-motile except

a. Staphylococcus b. Meningococcus
c. Gonococcus d. Rhodococcus agilis

91. Aspergillus fumigatus can infect

a. Birds b. Animals
c. Man d. All of them

92. Enterotoxin responsible for food poisoning is secreted by

a. Enterococci b. Entamoeba histolytica
c. Enterobacteriaceae d. Straphylococci

93. Autolysis is done by

a. Mitochondria b. Lysosomes
c. Golgi bodies d. Peroxisomes

94. A facultative anaerobic is

a. Only grow anaerobically
b. Only grow in the presence of O_2
c. Ordinarily an anaerobe but can grow with O_2
d. Ordinarily an aerobe but can grow in absence of O_2

95. The percentage of O_2 required by moderate anaerobe is

a. 0% b. < 0.5%
c. 2 – 8% d. 5 – 10%

96. Interferon is formed by

a. Lymphocytes b. Lymphoblasts
c. Fibroblasts d. All of these

97. Pigment bearing structure of bacteria are

a. Mesosomes b. Plasmids
c. Mitochondria d. Chromophores

98. Spirochete is

a. Gonococci
b. Strphylococci
c. Treponema pallidum
d. Streptococci

99. Histones are found in

a. Prokaryotes b. Eukaryotes
c. Viruses d. None of these

100. Cell wall of gram negative bacteria is

a. Thick
b. Lipids are present
c. Teichoic acids are absent
d. None of these

101. Cytoplasmic streaming is present in

a. Prokaryotes b. Animals
c. Eukaryotes d. Both a and b

102. The motile bacteria is

a. S. typhi b. K. pneumoniae
c. B. anthracis d. Shigella

103. The stain used to demonstrate fungus

a. Albert
b. Nigerosin
c. Lactophenol cotton blue
d. None of these

104. Exotoxina are

a. Heat labile
b. Heat stable
c. Part of cell wall
d. Polymerized complexes

105. The viruses that attack bacteria are

a. Bacterial viruses b. Bacterial pathogens
c. Bacteriophages d. Various

106. The size of virus particle may range

a. 0.02–0.2 ìm b. 0.5–10 ìm
c. 0.015–0.2 ìm d. 0.1–100 ìm

107. The bacterial cell multiplication is usually by

a. Mitosis b. Meiosis
c. Conjugation d. Binary-fission

108. Rod shaped bacteria are known as

a. Cocci b. Comma forms
c. Bacilli d. Plemorphic froms

109. All the groups of bacteria have cell wall

a. Mycobacteria b. Mycoplasmas
c. Clostridia d. Rickettsia

110. Thickness of cell wall ranges from

a. 9-10 nm b. 12-13 nm
c. 10-25 nm d. 30-40 nm

111. Teichoic acids and Teichuronic acids are found in

a. Gram positive bacteria
b. Gram negative bacteria
c. Fungi
d. None of these

112. Meosomes are

a. Kind of ribosomes
b. Formed during cell lysis
c. A part of cell wall
d. Principal sites of respiratory enzymes

113. The characteristic shape of the bacteria is maintained because of

a. Capsule b. Cell wall
c. Cell membrane d. Slime layer

114. Bacterial capsule is chemically composed of

a. Polypeptide
b. Polynucleotides
c. Polysaccharides
d. Polypeptides or polysaccharides

115. The cell wall deficient form of bacteria is

a. Mycoplasma b. 'L' form
c. Protoplast d. Spheroplast

116. Mesosomes are also known as

a. Mitochondria b. Chloroplasts
c. Golgi complex d. Chondroids

117. The differences between Gram positive and Gram negative bacteria is shown to reside in the

a. Cell wall b. Nucleus
c. Cell membrane d. Mesosomes

118. Capsule formation occurs in the presence of

a. Albumin b. Charcoal
c. Serum d. Starch

119. The virulence determining antigens of microorganisms may be

a. Proteins and polysaccharides
b. Carbohydrate – protein complexes
c. Polysaccharide – Phospholipid – Protein complexes
d. All of these

120. Organelles with hydrolytic enzymes are

a. Mitochondria b. Golgi complex
c. Lysosomes d. Ribosomes

121. Bacterial locomotion is accomplished by

a. Fimbria b. Flagella
c. Cytoskeleton d. Both a and b

122. Fimbriae are demonstrated by

a. Culture
b. Gram stain
c. Biochemical reactions
d. Haemaggulation test

123. The motile bacteria is

a. Salmonella typhi
b. Klebsiella pneumoniae
c. Bacillus anthracis
d. Shigella flexneri

124. Following cocci are non-motile except

a. Staphylococcus b. Meningococcus
c. Gonococcus d. Rhodococcus agilis

125. Metachromatic granules are chemically composed of

a. Lipids
b. Proteins
c. Polymetaphosphates
d. Polysaccharide

126. Metachromatic granules can be stained with

a. Saffranine b. Methylene blue
c. Crystal violet d. Pienic acie

127. Bacteria multiply by

a. Spore formation b. Simple binary fission
c. Conjugation d. Gametes

128. Bacterial spores are

a. Weakly acid fast b. Strongly acid fast
c. Alcohol fast d. Non acid fast

129. Endospores can be stained with

a. Safranine b. Crystal violet
c. Methylene blue d. Malachite green

130. The following bacteria produce pigment, except

a. Pseudomonas pyocyaneus
b. Serratia marcescens
c. D. pneumoniae
d. Staphylococcus aureus

131. The order of stains in Gram-staining procedure is

a. Crystal violet, Iodine solution, Alcohol, Saffranine
b. Iodine solution, Crystal Violet, Saffranine, Alcohol
c. Alcohol, Crystal Violet, Iodine solution, Saffranine
d. All of these

132. The percentage of alcohol used in Gram-staining is

a. 75% b. 90%
c. 60% d. 25%

133. Gram positive bacteria appear as

a. Pink b. Violet
c. both a & b d. None of these

134. Gram negative bacteria appear as

a. Pink b. Violet
c. both a & b d. None of these

135. The action of alcohol during Gram-staining is

a. Allows the color
b. It adds color
c. Decolorises the cells
d. None of these

136. Lipid contents is more in

a. Gram negative bacteria
b. Gram positive bacteria
c. Same in both
d. None of these

137. Cell-wall is

a. Thick in Gram positive than Gram negative
b. Thick in Gram negative than Gram positive
c. Equal in both
d. In Gram negative cell-wall is absent

138. The Lipid content present in Gram positive bacterial cell-wall is

a. 1-10 % b. 1-5 %
c. 2-8 % d. None of these

139. Rickettsiae stained by this technique responds as

a. Gram positive
b. Gram negative
c. Between positive and negative
d. None of these

140. Chlamydiae occur in

a. Elementary bodies b. Reticulate bodies
c. Complex structures d. a and b

141. Chlamydiae can be stained better with

a. Ziehl neelsen staining
b. Castaneda & Machiavello stains
c. Giminez stains
d. Both b and c

142. Algae means

a. Fresh water organisms
b. Sea weeds
c. Fresh water weeds
d. None of these

143. The study of algae is known as

a. Algalogy b. Phycology
c. Mycology d. Bacteriology

144. The free floating algae are known as

a. Phytoplankins b. Benthons
c. Sea weeds d. None of these

145. Sexual reproduction of algae is carried by

a. Isogamy b. Anisogamy
c. Oogamy d. All the above

146. In algae, advanced type of sexual reproduction is

a. Isogamy b. Anisogamy
c. Oogamy d. None of these

147. Alginic acids and its salts are obtained from the wall of

a. Red algae b. Brown algae
c. Green algae d. Red and brown algae

148. The molds obtained nutrition from dead and decaying matter which are called

a. Saphrophytes b. Parasites
c. Commensals d. None of these

149. Most molds are capable of growing in the temperature range between

a. $0^{\circ} - 25^{\circ}C$ b. $0^{\circ} - 35^{\circ}C$
c. $10^{\circ} - 25^{\circ}C$ d. $10^{\circ} - 35^{\circ}C$

150. Examples for actinomycetes

a. Streptomyces b. Spirillospora
c. Frankia d. Dermatophillia
e. All of the above

151. Pellicle is found in only

a. Algae b. Fungi
c. Bacteria d. Protozoans

152. The Largest virus is

a. Parvo virus b. Pox virus
c. Rhabdo virus d. None of these

153. The smallest virus is

a. Parvo virus b. Rhabdo virus
c. Pox virus d. Adeno virus

154. The extra cellular infections virus particle is called

a. Capsid b. Nucleocapsid
c. Virion d. None of these

155. Shape of bacteriophage is

a. Brick shape b. Bullet shape
c. Helical shape d. Tadpole shape

156. If only one stain is used for staining a specimen

a. Simple staining b. Negative staining
c. Differential staining d. None of these

157. Other than the sample (specimen) the remaining portion is stained then it is called

a. Simple staining b. Negative staining
c. Differential staining d. None of these

158. If more than one stain is used, such staining is called

a. Simple staining b. Negative staining
c. Differential staining d. None of these

159. 'Fluorescence' was first observed by

a. Kohler b. Coons
c. Both a and b d. None of these

160. By using fluorescence property fluorescent antibody technique was developed by

a. Kohler b. Coons
c. Both and b d. None of these

161. During staining for Electron Microscopy, the method which improves contrast of specimen is

a. Positive staining b. Negative staining
c. Shadow staining d. None of these

162. The inorganic forms of nitrogen, which are accepted by bacteria are

a. Nitrates b. Nitrites
c. Ammonium salts d. All of these

163. Archaeo bacteria are known as

a. Halophiles
b. Red extreme halophiles
c. Osmophiles
d. Extreme thermophiles

164. Nitrite is converted into nitrate by the bacteria

a. Nitrosomonas b. Nitrosocytes
c. Nitrobacter d. Azatobacter

165. Sulphur oxidizing bacteria is

a. Alcaligenes b. Pseudomonas
c. Thiobacillus d. None of these

166. Bacillus Schlegelli is

a. Hydrogen – Oxydising bacteria
b. Sulphur – Oxydising bacteria
c. Iron-Oxidising bacteria
d. Nitrite oxidizing bacteria

167. The group of bacteria which deopends on organic sources in nature for their energy requirements. They are said to be

a. Chemotrophs b. Phototrophs
c. Heterotrophes d. Organotrophs

168. Majority of bacteria are

a. Saprophytes b. Symbionts
c. Commensals d. Parasites

169. Symbionts are

a. Bacteria in symbiotic association
b. The group of fungi in symbiotic association
c. The groups participating in symbiotic association
d. All of these

170. The best example for symbiotic association is

a. E.coli in intestine of man
b. Lichens
c. Normal floraof skin
d. All of the above

171. The enzymes responsible for decomposition is

a. Lipolytic b. Proteolytic
c. Lysozyme d. Both a and b

172. Urea is decomposed by the species

a. Micrococcus sps. b. Nitrosomonas sps.
c. Proteus sps. d. Both a and c

173. Phycobiont is

a. The algal part in Lichens
b. The fungal part in Lichens
c. Laustoria formation
d. None of these

174. Parasitic form must contain

a. Capsules b. Cell-wall
c. Endospores d. Flagella

175. The total no. of genes in the group of same individuals is

a. Genome b. Gene map
c. Gene pool d. None of these

176. Transformation was observed mainly in

a. Bacteriophages b. Temperate phages
c. λ –phage d. All of these

177. Capsulated forms of bacteria are

a. Virulent b. A virulent
c. Useful d. Symbiotic

178. The bacterial cells participating in conjugation are

a. Conjugants b. Fertile cells
c. Exconjugants d. None of these

179. Phagocytes are

a. Monocytes b. Macrophages
c. Basophils d. All of these

180. The microorganism engulfed by phagocyte resides in a vacuole is known as

a. Phagosome b. Lysosome
c. both a and b d. None of these

181. Toxic products in phagolysosome are

a. H_2SO_4
b. Singlet O_2
c. Superoxide radicals
d. All of these

182. During destruction of antigen particle in phagolysosome the product formed in phagolysosome the product formed during formulation is

a. Acetic acid b. Lactic acid
c. Citric acid d. None of these

183. The coating of a bacterium with antibody or complement that leads to enhanced phagocytosis of the bacterium by phagocytes is called

a. Opsonisation b. Aggulation
c. CFT d. None of these

184. Attenuation means

a. Killing of the bacteria (microorganism)
b. Inactivation of bacteria
c. More activating the bacteria
d. Both 1 and 2

185. Infection that results in pus formation are called

a. Focal infection b. Acute infection
c. Pyogenic infection d. Chronic infection

186. Presence of viable bacteria in the blood stream is called

a. Viraemia b. Septicaemia
c. Bacteraemia d. Bactericidal

187. Presence of viruses in the blood stream is known as

a. Viraemia b. Bacteraemia
c. Septicaemia d. Pyemia

188. Opsonin is the

a. Cellwall component
b. Plasma component
c. Serum component
d. Cytoplasm component

189. β-haemolytic bacteria is

a. Streptococcus pyogenes
b. Str. pneumoniae
c. Str. viridans
d. Str. faecalis

190. The natural reservoir of infection for cholera is

a. Flies b. Horse
c. Man d. None of these

191. Main cause for Cholera is

a. Poverty and insanitation
b. Mosquitoes
c. Toxin produced by pesticides
d. None of these

192. Vibrio cholera differs from vibrio eltor by

a. It shares some Inaba, Ogawa subtypes with eltor
b. Resistant to polymuxin
c. Eltor is non-motile
d. Causes less subclinical infections as compared to eltor

193. Cholera vaccine gives protection for

a. 1 – 3 months b. 3 – 6 months
c. 6 – 9 months d. 9-12 months

194. Prophylaxis of cholera is

a. Protected water supply
b. Environmental sanitation
c. Immunisation with killed vaccines
d. All of these

195. Sh.dysenteriae is also known as

a. Sh.shiga
b. Sh.schmitzi
c. Both a and b
d. Sh.para dysenteriae

196. Acid fast bacteria are

a. Neisseria b. Staphylococci
c. Mycobacteria d. All of the above

197. Mycobacteria are stained with

a. Gram's staining
b. Simple staining
c. Both a and b
d. Ziehl – Neelsen's staining

198. Niacin test is positive in case of

a. Corynebacterium
b. M. tuberculosis
c. M. bovis
d. M. avium

199. Lepromin test

a. Is negative in tubercular leprosy
b. Positive in lepromatous type
c. Indicated delayed hypersensitivity test
d. Indicates infection

200. Streptococcus forms causes which type of infections?

a. Fever b. Zoonotic
c. Pyogenic d. None of these

201. Streptococcus pyogenes classification is based on

a. Protein M b. Protein T
c. Protein R d. Polysaccharide C

202. α-haemolytic streptococci are also known as

a. Str. pyogenes b. Virulence group
c. Viridans group d. None of these

203. Streptolysin O is inactivated by

a. CO_2 b. Nitrogen
c. Oxygen d. Serum

204. Streptolysin 'S' is

a. Oxygen unstable b. Thermostable
c. Oxygen stable d. None of these

205. Influenza virus is identified by using

a. Haemaggulutinin inhibition test
b. Tissue culture method
c. Embryonated eggs
d. Plaque formation

206. Growth of influenza virus is identified by

a. Cytopathic effects b. Hela cells
c. Both a and b d. None of these

207. Glutamic acid is oxidized by the species except

a. B. abortus b. B. melienasis
c. B. suis d. B.canis

208. "Prozone phenomenon" is encountered in

a. A typical mycobacteria
b. Brucella
c. Streptococcus
d. Bordetella pertusis

209. Of the following, this is a capsulated organism

a. Bacillus anthracis b. Escherichia-coli
c. Corynebacterium d. Brucella

210. Anthrax is a

a. Vector borne b. Zoonotic infection
c. Wound bone d. Soil borne

211. Mc Fadyean's reaction is used to detect

a. Bacillus anthracis b. Brucella
c. Corynaebacterium d. None of these

212. Gasgangarene bacillus is

a. Facultative anaerobe
b. Obligate anaerobe
c. Facultative aerobe
d. Obligate aerobe

213. Coagulase test is used for

a. Salmonella
b. Staphylococcus
c. Bordetella
d. Pneumococcus

214. HIV is belonging to

a. Retro Viridae
b. Rhabdo Viridae
c. Toga Viridae
d. Paramyxo Viridae

215. Special feature of Retro viruses

a. Reverse transcriptase
b. RNA directed DNA polymerases
c. Both a & b
d. Boils

216. AIDS virus is

a. RNA virus b. DNA virus
c. Retro virus d. Entero virus

217. AIDS is caused by

a. HTLV – I b. Bunya virus
c. HTLV – III d. All

218. Which of the following organisms is most commonly associated with AIDS pneumonia?

a. Klebsiella
b. Str. pneumonia
c. Mycoplasma
d. Mycobacterium tuberculosis

219. Sero conservation in HIV infection takes place in

a. 3 weeks b. 6 weeks
c. 9 weeks d. 12 weeks

220. Following is the marker of HIV infection in blood:

a. Reverse transcriptase
b. DNA polymerase
c. RNA polymerase
d. None of these

221. Which of the following is the most specific in diagnosis of AIDS?

a. IHA
b. Western blot
c. ELISA
d. Immuno electrophoresis

222. The interval period between HIV infection and appearance of antibodies in serum is called

a. Intrinsic period b. Incubation period
c. Window period d. None of these

223. Screening test for AIDS is

a. Western blot test b. ELISA test
c. Both a and b d. VDRL test

224. Confirmatory test for AIDS is

a. Western blot test b. ELISA test
c. Karpas test d. Fujerbio test

225. The most common infection in AIDS is

a. LGV b. CMV
c. Pnemocystis carnii d. Syphilis

226. During AIDS, HIV infects

a. CD_3 lymphocytes b. CD_4 lymphocytes
c. CD_2 lymphocytes d. Blymphocytes

227. Lab diagnosis of Leishmaniasis is done by

a. CFT b. Peripheral smear
c. Blood culture d. All of these

228. Those fungi which do not have a sexual stage are classified as

a. Phycomycetes b. Ascomycetes
c. Basidiomycetes d. Fungi imperfecti

229. Tinea capitis is

a. Ring worm of the foot
b. Ring worm of scalp
c. Ring worm of non-hairy skin of body
d. Both a and c

230. Diagnosis of bacterial disease can be made by

a. Finding bacteria in pathological fluids
b. Isolation of bacteria by culture from exudates or blood
c. Both a and b
d. None of these

231. Staphylococcus aureus are characterized by

a. Formation of acid in sucrose, dextrose
b. Liquification of gelatin due to production of gelatinase
c. Strains are catalase positive
d. All of above
e. None of these

232. Cholera occurs in _____ form

a. Endemic b. Epidemic
c. Sporadic d. all
e. None of these

233. Endemic typhus is caused by

a. R.mooseri b. R.quintana
c. R.prowazekii d. any of them
e. None of these

234. A man is usually infected for tick typhus by –

a. Drinking milk of sick animals
b. Tending cattle
c. Inhaling infected dust
d. All of these

235. In Gram positive bacteria, ratio of RNA to DNA is

a. 8 : 1 b. 1 : 2
c. Almost equal d. None of these

236. Ziehl – Neelson stain is a _____

a. Simple stain b. Counter stain
c. Differential stain d. None of them

237. Wet mount slide preparations are used in microbiology as they allow to see

a. Size and shape of individual organisms
b. Characteristic arrangement or grouping of cells
c. Motility of the organism
d. All of these
e. None of these

238. Organism resistant to degradative lysosomal enzymes includes

a. M.tuberculosis
b. Legionella pneumophila
c. M.leprae
d. Both a and b
e. Both b and c

239. Freeze-etch particles (used in preparing cell for electron microscopy) can be located in the

a. Cytoplasm b. Cell wall
c. Cell membrane d. Nucleus

240. The properties common to Gram positive and negative cell walls are

a. Equal susceptibility to hydrolysis by lysozyme
b. Peptide crosslinks between polysaccharides
c. Rigid peptoglycon activity
d. Greater resistance to drying than vegetative cell.
e. All of these

241. The main difference in true bacteria and mycoplasma is that it does not posses –

a. Flagella b. Cell wall
c. ATP synthesis d. A capsule

242. The organism responsible for retarding penetration of host cell by an inhibitor of ATP synthesis.

a. M.pneumoniae
b. Rickettsia rickettsii
c. Chlamydia trachomatis
d. Chlamydia psitacci

243. Mycoplasmas differ from Chalamy-diae in that, it

a. has ability to cause urinary tract infection
b. lack of atrue bacterial cell wall
c. susceptible to penicillin
d. All of these
e. None of these

244. Fungal disease in human is caused by –

a. Inhalation of conidia
b. Invasion of mucous membrane
c. Contamination of wounds with conidia or myceliat fragments
d. All of these
e. None of these

245. Fungi differs with bacteria in that it –

a. Contain no peptidoglycan
b. Are prokaryotic
c. Susceptible to griseofulvin
d. Have nuclear membranes
e. All of these

246. A polysaccharide capsule is present on cryptococci which –

a. Inhibits phagocytosis
b. Is an aid to diagnose
c. Cross reacts with rheumatoid factor
d. All of these

247. The largest protozoa is –

a. Balantidium coli
b. Entamoeba coli
c. Trichomonus vaginalis
d. Toxoplasma gondii

248. Premunition is particularly seen in –

a. Ascaris b. Giardia
c. Plasmodium d. None of these

249. Which of the following vaccine contains attenuated form of bacteria?

a. BCG b. TAB
c. Polio d. Cholera

250. The bacteria, which is motile at 22°C but non-motile at 37°C is

a. Tranformation b. Transduction
c. Conjugation d. Cell fusion

251. Techoic acid is –

a. Found in the walls of Gram positive bacteria
b. Provide receptors for phages
c. Make up outer wall of Gram negative bacteria
d. Influence the permeability of the membrane

252. One flagelium at one end of the organ is called –

a. Monotrichate b. Amphitrichate
c. Iophotrichate d. Peritrichate

253. What is the function of bacterial capsule?

a. Production of organism from phagocytosis
b. Helps in adherence of bacteria to surface in its environment
c. Both a and b
d. None of these

254. Which of the following is the charachteristic of bacterial spore?

a. Highly refractile
b. Usually dehydrated
c. Sensitive to formaldehyde
d. All of these

255. Which of the following are acid fast structures?

a. Mycobacteria b. Bacterial spores
c. Nocardia d. All of these

256. All of the following are acid fast structures except

a. Clostridium b. Bacterium spores
c. Exoskeleton d. None of these

257. All of the following are energy source of bacteria except

a. Oxidation of inorganic compounds
b. Oxidation of organic compounds
c. Absorption of heat
d. Utilisation of visible light

258. Identify the obligate anaerobes

a. Salmonella b. Vibrio cholera
c. Cl. tetani d. Sarcinae

259. Streptococci which are destroyed at 60°C for 30 minutes

a. Preptostreptococci b. Strepto viridans
c. Strepto hemolyticus d. All of these

260. Toxins or enzymes which are not produced by streptococcus pyrogens

a. Hyaluronides b. Phosphate
c. Hemolysin d. Streptokinase

261. Cholera red reaction is identified by

a. Sulphuric acid b. Nitric acid
c. Hydrochloric acid d. Carbolic acid

262. Diagnosis of carrier of salmonella typhi may be shown by

a. Fecal culture b. Bile culture
c. Urine culture d. All of these

263. Daisy head colony is associated with

a. M.tuberculosis b. C.diphtheriae
c. Cl. tetani d. None of these

264. Neil mooseri reaction is related to

a. Rickettsiae b. Chlamydiae
c. Spirochaetes periringens d. Clostridium

265. All of the following are DNA viruses except –

a. Parvo virus b. Paramyxo virus
c. Herpes virus d. Pix virus

266. The dengue fever virus is –

a. Arbo virus b. Echo virus
c. Entero virus d. Orthomyxo virus

267. Dengue fever is caused by –

a. Bacteria b. Virus
c. Fungi d. Rickettsia

268. Which of the following characters are related to viruses?

a. No growth on inanimate culture media
b. Not sensitive to antibiotics
c. No energy producing enzymes
d. Insensitive to interferon

269. Main causative organism of chiken pox is

a. Fox virus b. Mumps virus
c. Measles virus d. None of these

270. Rickesia are stained with

a. Giesna and Castaneda stains
b. Macchiavello and Gimnezstains
c. Both a and b
d. Malachite green

ANSWERS

1. c	2. c	3. c	4. d	5. a	6. a
7. d	8. c	9. a	10. b	11. b	12. b
13. b	14. b	15. c	16. a	17. c	18. a
19. b	20. d	21. a	22. c	23. c	24. c
25. c	26. c	27. d	28. c	29. c	30. d
31. c	32. d	33. a	34. c	35. b	36. b
37. c	38. b	39. a	40. d	41. c	42. b
43. c	44. c	45. c	46. a	47. c	48. a
49. a	50. d	51. a	52. c	53. d	54. b
55. d	56. c	57. c	58. c	59. b	60. c
61. c	62. a	63. a	64. a	65. a	66. c
67. b	68. d	69. a	70. b	71. d	72. c
73. a	74. a	75. a	76. b	77. a	78. d
79. b	80. b	81. a	82. d	83. a	84. c
85. a	86. b	87. b	88. b	89. d	90. a
91. b	92. d	93. b	94. d	95. c	96. d
97. d	98. c	99. b	100. c	101. c	102. a
103. c	104. a	105. c	106. c	107. d	108. c
109. b	110. c	111. a	112. d	113. b	114. d
115. b	116. d	117. a	118. c	119. d	120. c
121. d	122. d	123. a	124. d	125. c	126. b
127. b	128. a	129. d	130. c	131. a	132. b
133. b	134. a	135. c	136. a	137. a	138. b
139. b	140. d	141. d	142. b	143. b	144. a
145. d	146. c	147. b	148. a	149. b	150. d
151. d	152. b	153. b	154. c	155. d	156. a
157. b	158. c	159. a	160. b	161. b	162. d
163. b	164. c	165. c	166. a	167. c	168. d
169. c	170. b	171. b	172. d	173. a	174. a
175. c	176. b	177. c	178. a	179. d	180. a
181. d	182. b	183. a	184. b	185. c	186. c
187. a	188. c	189. a	190. c	191. a	192. d
193. b	194. d	195. c	196. c	197. d	198. b
199. c	200. d	201. a	202. c	203. c	204. c
205. a	206. b	207. d	208. b	209. a	210. b
211. a	212. b	213. b	214. a	215. c	216. c
217. d	218. d	219. c	220. a	221. b	222. c
223. b	224. a	225. c	226. b	227. d	228. d
229. c	230. c	231. c	232. d	233. a	234. c
235. a	236. c	237. d	238. e	239. c	240. d
241. b	242. b	243. b	244. d	245. e	246. a
247. a	248. c	249. a	250. d	251. a	252. a
253. c	254. d	255. d	256. a	257. c	258. c
259. d	260. b	261. a	262. d	263. b	264. a
265. b	266. a	267. b	268. d	269. d	270. c

CHAPTER 3

STERILISATION, CULTURE MEDIA AND PURE CULTURE TECHNIQUES

1. The medium used in membrane filter technique was

a. EMB agar b. EMR-Vp medium
c. Lactose broth d. Endo agar

2. Lysol is a

a. Sterilent b. Disinfectant
c. Antiseptic d. Antifungal agent

3. Which of the following is a neutral stain?

a. Picric acid b. Gmiemsa
c. Neutral red d. Malachite green

4. Peptone water medium is an example for

a. Synthetic medium
b. Semisynthetic medium
c. Differential medium
d. None of these

5. The method in which the cells are frozen dehydrated is called

a. Pasteurization b. Dessication
c. Disinfection d. Lypophilization

6. The technique used to avoid all microorganisms is accomplished by

a. Sterlization
b. Disinfection
c. Surgical sterilization
d. Disinfection Sterilization

7. Thermal death time is

a. Time required to kill all cells at a given temperature
b. Temperature that kills all cells in a given time
c. Time and temperature needed to kill all cells
d. All of the above

8. A culture medium the exact composition of which is not known was called as

a. Simple b. Complex
c. Defined d. Natural

9. Elek's gel diffusion test is used for the detection of

a. Tetani toxin b. Cholera toxin
c. Diophtheria toxin d. Toxoid

10. Temperature required for pasteurization is

a. Above 150°C b. Below 100°C
c. 110°C d. None of these

11. Separation of a single bacterial colony is calle

a. Isolation b. Separation
c. Pure culturing d. All of these

12. Which of the following is ionizing radiation?

a. U.V. rays b. IR
c. γ-rays d. None of these

13. Which of the following induces dimerisation of thymine?

a. X-rays b. U.V. rays
c. ã-rays d. None of these

14. When food material are preserved at a temperature just above freezing temperature, the process is called.

a. Freezing b. Pasteurisation
c. Chilling d. Frosting

15. Which of the following method of sterilization has no effect on spores?

a. Drying b. Hot air oven
c. Autoclave d. None of these

16. Treponema pallidum can be best indentified using

a. Fluorescence microscope
b. Bright field microscope
c. Dark field microscope
d. Flourescence microscope

17. Autoclaving is carried at

a. Dry heat
b. Atmospheric pressure
c. 120°C
d. All of these

18. Temperature in pasteurization is

a. 62.8°C b. 35.7°C
c. 68.2°C d. 60.8°C

19. The bacterial culture prepared by pure culture method is

a. Inoculum b. Suspension
c. Dilution d. None of these

20. Algae are rich in

a. Carbohydrates b. Proteins
c. Vitamins d. All of these

21. L-Lysine is produced from

a. Corynebacterium glutamicum
b. Clostridium botulinum
c. Mycobacterium sps
d. Pseudomonas

22. The orderly increase in the quantity of all of the cellular components is known as

a. Reproduction b. Growth
c. Binary fission d. None of these

23. Theobacillus thio oxidans grow at pH

a. 7.0 b. 1.0
c. 6.0 d. 9.5

24. Slow freezing requires the conditions

a. 0°C to 15°C for 15 min.
b. – 6 °C to – 10°C for 10 min.
c. – 15°C to 3 to 72 hrs.
d. None of these

25. Discontinuous heating is called

a. Pasteurization b. Sterilization
c. Fermentation d. Tindalisation

26. Isolation is

a. Purification of culture
b. Introduction of inoculum
c. Separation of a single colony
d. To grow microorganisms on surfaces

27. The condition required for autoclave

a. 121°C temp.and 15 lbs. pressure for 20 min.
b. 120°C temp.and 20 lbs. pressure for 30 min
c. 150°C temp. for 1 hr.
d. 130°C temp for 2 hr.

28. Lysozyme is effective against

a. Gram negative bacteria
b. Gram positive bacteria
c. Protozoa
d. Helminthes

29. Blood agar medium is

a. Enrichment medium
b. Enriched medium
c. Selective medium
d. Differential medium

30. Infrared radiation is a method of sterilization by

a. Dry heat b. Moist heat
c. Chemical method d. Mechanical method

31. Lyophilization means

a. Sterilization
b. Freeze-drying
c. Burning to ashes
d. Exposure to formation

32. Temperature used for hot air oven is

a. 100°C for 1 hour
b. 120°C for 1 hour
c. 160°C for 1 hour
d. 60°C for 1 hour

33. Phenol co-efficient indicates

a. Efficiency of a disinfectant
b. Dilution of a disinfectant
c. Purity of a disinfectant
d. Quantity of a disinfectant

34. This is an agar plate method and is commonly used for estimation of the number of bacteria in milk.

a. Standard Plate Count (SPC)
b. Spread plate
c. Lawn culture
d. Roll tube method

35. Agar is obtained form

a. Brown algae b. Red algae
c. Green algae d. Blue-green algae

36. A gram positive organism which produces swarming on culture medium is

a. Salmonella b. Clostridium
c. Staphylococci d. Proteus

37. Enhancement of virulence in bacteria is known as

a. Pathogenicity b. Attenuation
c. Exaltation d. Toxigenicity

38. For effective sterilization in an autoclave the temperature obtained is

a. 50°C b. 100°C
c. 120°C d. 180°C

39. Spores are killed by

a. 70% alcohol b. Glutaraldehyde
c. Autoclaving d. Both b and c

40. Glassware are sterilized by

a. Autoclaving b. Hot air over
c. Incineration d. None of these

41. Tyndallisation was proposed by

a. Tyndall b. Pasteur
c. Koch d. Jenner

42. Viruses can be cultivated in

a. Lab media b. Broth
c. Living cells d. None of these

43. By pasteurization

a. All the microorganisms can be removed
b. Only pathogenic forms can be removed
c. Only non-pathogenic forms can be removed
d. All of these are correct

44. The temperature required for pasteurization is

a. Above 100°C b. Below 100°C
c. 100°C d. None of these

45. In the medium other than nutrients, if any substance is used in excess, that medium is

a. Enriched medium
b. Special medium
c. Enrichment medium
d. None of these

46. Example for indicator medium is

a. Nutrient Agar
b. Nutrient broth
c. Wilson and Blair
d. Czapeck-dox medium

47. Example of Anaerobic medium is

a. Robertson cooked-meat medium
b. Nutrient agar
c. Nutrient broth
d. Mac-Conkey's agar

48. The differentiate lactose and non-lactose fermentors, the medium used is

a. Wilson & lair
b. Blood Agar
c. Tetra thionate broth
d. Mac-Conkey's Agar

49. Best method for getting pure culture is

a. Streak-plate b. Agar slant
c. Both a & b d. None of these

50. To transfer cultures from one place to another, the device used is

a. Slant b. Needle
c. Inoculation loop d. Autoclave

51. The bacterial culture prepared by pure culture is

a. Inoculum b. Suspension
c. Dilution d. None of these

52. Separation of a single colony is

a. Pure-culturing b. Isolation
c. Separation d. Both a and b

53. Growth period of the culture is

a. Inoculation b. Incubation
c. Incineration d. Isolation

54. At the temperature 160°C for one hour, complete sterilization occurs in

a. Autoclave b. Hot air oven
c. Laminar flow d. Incubator

55. In autoclave, the principle involved is

a. Dry heat
b. Moist heat
c. Steam under pressur
d. Both b and c

56. The spores of th bacteria which can withstand the moist heat effect also

a. Bacillus subtilis
b. Coxiella burnetti
c. Bacillus stearothermophilus
d. Pseudomonas

57. Factors on which disinfectivity of a disinfectant depends

a. Concentration of the substance
b. Time of action
c. pH of the medium and temperature suitable for the chemical
d. All of the above

58. Aldehydes, which are most powerful disinfectants

a. Formaldehyde b. Acetaldehyde
c. Glutamal aldehyde d. Both a and c

59. Accridine dyes are more effective against

a. Gram positive b. Gram negative
c. Mycoplasmas d. Rickttsiae

60. The sterilizing agent is

a. Ethelene oxide b. Oxygen
c. Nitrogen d. Carbon tetrachloride

61. Salts of heavy metals used as disinfectants are

a. Thiomersal b. Phenyl mercury nitrate
c. Mercurochrome d. All of these

62. Cultures are prepared by penetrating the inoculation loop with suspension into the medium, they are

a. Stock cultures b. Stabcultures
c. Sub-cultures d. None of these

63. The principle involved in the streak plate method is

a. Separation b. Streaking
c. Isolation d. Dilution

64. Culture media for fungi are

a. Potato dextrose agar (PDA)
b. Sabouraud's agar
c. Czapekdox agar
d. All of the above

65. Spores of actinomycetes are very sensitive, killed at room temperature of

a. 52°C for 30 min. b. 65°C for 30 min.
c. 70°C for 30 min. d. 43°C for 30 min.

66. The term that is used for the bacteria which can withstand pasteurization but does not grow at higher temperatures

a. Thermophiles
b. Extreme thermophiles
c. Thermoduric
d. Facultative thermophiles

67. A common laboratory method of cultivating anaerobic micro-organisms is

a. Gas pack system
b. Brewer jar system
c. Pyrogallic acid over the cotton
d. None of these

68. Alkaliphiles grow at pH value between

a. 1 to 6 b. 6 to 9
c. 1 to 11 d. 7 to 12

69. The micro-organisms grow at high salinity are

a. Osmophiles b. Halophiles
c. Both a and b d. None of these

70. Non-lactose fermenting colonies seen on Mac Conkey's medium are

a. Salmonella typhi
b. Escherichia coli
c. Klebsiella pneumoniae
d. Shigella shigae

71. Wilson and Blair medium is used for isolation of

a. Staphylococci b. Salmonella typhosa
c. Vibrio cholerae d. Shigella shigae

72. Laboratory diagnosis of enteric fever is based on

a. Blood culture
b. Urine and stool culture
c. Widal test
d. All of the above

73. Shigella was first isolated by

a. Shiga b. Schmitz
c. Sonnei d. Robert Koch

74. Which of the following are gas producing Salmonella?

a. S.typhi b. S.enteritidis
c. S.cholerasuis d. S.typhimurium

75. Kauffmann white scheme is used to detect

a. Salmonella spp. b. Shigella spp.
c. E.coli d. None of these

76. On Mac Conkey's medium Esch. Coli forms

a. Colorless colonies
b. Greenish pigmentation
c. Pink coloured colonies
d. Medusa head appearance

77. C.diphtheriae requires

a. LJ medium
b. Mac Conkey's medium
c. Potassium tellurite medium
d. PDA medium

78. Culture medium for Mycobacterium tuberculosis

a. LJ medium
b. Mac Conkey's medium
c. Wilson blair medium
d. None of these

79. Lepra bacillus is best cultured on

a. Armadillo's brain
b. Foot pad of mice
c. Liver of guinea pig
d. Any of the above

80. Culture medium for clostridia spp.

a. 76 Lower stein Jensen's medium
b. Mac Conkey's medium
c. Robertson's cooked meat medium
d. None of these

81. Clsotridium welchii is positive for

a. Elek's gel precipitation test
b. Nagler's test
c. Weil felix test
d. Bacitracin test

82. Nagler's reaction detects

a. Coagulase b. Hyaluronidase
c. Lecithinase d. None of these

83. Incubation period of Cl. welchii is

a. 8-12 hours b. 7-10 hours
c. 5-7 hours d. 2-4 hours

84. The average incubation period of tetanus is

a. 2-3 days b. 7-10 days
c. 14-21 days d. 3-4 weeks

85. Salt agar is used for

a. Streptococcus b. Staphylococcus
c. Vibrio d. Shigella

86. Culture medium of Leishmania is

a. Sabousand's medium
b. NNN medium
c. Wilson Blair medium
d. Czapek – dox medium

87. A simple asexual spore which develops by budding is known as

a. Chlamydospore b. Blastospore
c. Arthospore d. Conidia

88. Culture medium used for fungus is

a. Sabouraud's medium
b. Nutrient agar
c. Nutrient broth
d. Minimal agar medium

89. For sterilization of fermentation equipment the method followed is

a. Radiation b. Chemicals
c. Heating d. All of these

90. Listed below are substances which are assayed by organisms mentioned in A to E. Match them correctly:

1.	Crystal Violet I.P.	A.	Pasteurella pestis
2.	Ampicillin I.P.	B.	Bacillus cerus
3.	Plaque Vaccine I.P.	C.	Micrococcus luteus
4.	Rifampicin	D.	Lactobacillus aureus
		E.	Lactobacillus aureus
		F.	Bacillus subtillus

91. Match the following terms with their respective formulations A to E:

1.	Lysol	A.	Higher boiling fractions of the tar acids
2.	Black fluids	B.	Prepared from refined tar acids
3.	White fluids	C.	Solution of cresol with soap
4.	Iodophores	D.	Basic molecules has varying numbers of amino groups
		E.	Iodine combined with complex organic chemicals

92. Match the following tests with their respective applications A to E:

1.	Schick test	A.	Tuberculosis
2.	Mantoux test	B.	Detection of extraneous microorganisms
3.	Sterility test	C.	Diphtheria toxin
4.	Potency test	D.	Detection of infection caused by Rickettsia prowazeki
		E.	Usefulness of immunological products

93. Match the following equipments with their respective methods of sterilization A to E:

1.	Glass syringes	A.	Autoclave
2.	Disposable instrument	B.	Chemical
3.	Respiratory parts	C.	Dry heat
4.	Dialysis machine	D.	g-Radiation
		E.	Chicken pox in children

94. The items listed from A to D can be identified by the tests given below :

1.	Coomb's test	A.	Candida albicans
2.	Coagulase test	B.	Virulent staphylococcus aureus
		C.	Mycobacterium tuberculosis
		D.	Non-agglutinating antibodies

95. D.pneumoniae can be cultivated in

a. Glucose broth
b. Serum broth
c. Agar and blood agar
d. Chocolate agar
e. All of these

96. D.pneumoniae can be identified by

a. Microscopic exam
b. Culture of sputum/blood
c. Animal inoculation
d. All of these
e. None of these

97. The diagnosis of tuberculosis is carried out by

a. Emulator b. Antiformin method
c. Petroff's method d. Concentration method
e. All of these

98. The size of the virus can be determined by

a. Micrography
b. Ultra-centrifugation at high speed
c. Ultra-filteration
d. All of these

99. Differential staining of bacteria spore is related to

a. Albert's staining
b. Lugol' s staining
c. Moller's staining
d. Indian ink preparation

100. Electron microscope studies does not help in identifying the section of bacterial spore

a. Core b. Spore cortex
c. Capsule d. All of these

101. Wilson and Blair bismuth sulphite medium is used for the growth

a. Salmonella typhi b. Shigella dysenteriae
c. Vibrio cholerae d. E. coli

102. Which Rickettsia can be grown on blood agar media?

a. Lactobacilli b. Streptobacillus
c. Bacillus anthrax d. Vibrio cholerae

ANSWERS

1. b	2. b	3. c	4. b	5. d	6. a
7. b	8. a	9. c	10. b	11. a	12. c
13. b	14. c	15. a	16. b	17. c	18. a
19. a	20. d	21. a	22. b	23. b	24. c
25. d	26. c	27. c	28. b	29. b	30. d
31. b	32. c	33. a	34. a	35. b	36. d
37. c	38. c	39. d	40. b	41. a	42. c
43. b	44. b	45. a	46. c	47. a	48. d
49. c	50. b	51. a	52. b	53. b	54. b
55. d	56. c	57. d	58. d	59. a	60. a
61. d	62. b	63. d	64. d	65. b	66. c
67. c	68. d	69. c	70. a	71. b	72. d
73. c	74. b	75. a	76. c	77. c	78. a
79. b	80. c	81. b	82. c	83. a	84. b
85. b	86. b	87. b	88. b	89. d	

90. 1.d, 2.c, 3.a, 4.e 91. 1.c, 2.a, 3.b, 4.e 92. 1.c, 2.a, 3.b, 4.e
93. 1.c, 2.d, 3.e, 4.b 94. 1.d, 2.a 95. e 96. e
97. e 98. d 99. c 100. c 101. a 102. a

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CHAPTER 4

GENERAL PROPERTIES OF MICROORGANISMS

1. When a bacterial cell and mitochondria are treated with cyanide and carbon monoxide what happens initially?

a. Respiration inhibits
b. Photosynthesis inhibits
c. Protein synthesis inhibits
d. No effect occurs

2. Which virus was first observed?

a. Hepatitis Virus
b. TMV
c. Cauliflower mossaic virus
d. None of these

3. The most important energy-yielding reaction for an aerobic organism is

a. Glycosis b. EMP
c. KDPG d. Both b and c

4. A disease that can be transmitted by an infectious agent from one individual to another was called

a. Epidemic b. Pandemic
c. Communicable d. Comma

5. Cell cycle regulated by

a. Cyclins b. Cdks
c. Cyclins and Cd ks d. None of these

6. The proteinaceous compound are converted to ammonia by

a. Putrification bacteria
b. Ammonifiaction bacteria
c. Nitrification bacteria
d. Denitrifying bacteria

7. A cell becomes flaccid when placed in a

a. Isotonic solution
b. Hypertonic solution
c. Hypotonic solution
d. Normal solution

8. A mutation causing a substitution of one amino acid is called

a. Point mutation b. Silent mutation
c. Missence mutation d. None of these

9. The formation spindle fibres in the process of cell division is prevented by

a. Corchicine b. ATP
c. Hydrazine d. All of these

10. Important class of respiratory enzymes:

a. NAD b. Cytochromes
c. ATPase d. Hydrolases

11. The primary mode of transmission of poliomyelitis virus:

a. Flies b. Milk
c. Person to person d. Food and water

12. Genetic constitution of the cell is

a. Phenotype b. Genotype
c. Cryptotype d. Histotype

13. The primary mode of transmission of poliomyelitis is

a. Oral route b. Blood
c. Milk d. Person to person

14. Cerebral malaria is caused by

a. Plasmodium vivox
b. P.ovale
c. P.falsiparum
d. P.malaria

15. Ergot disease is caused by

a. Puccinia b. Rhizopus
c. Claveceps d. Penicillium

16. Most bacteria require vitamins as

a. Growth Factors
b. Sources of energy
c. Sources of carbon
d. Sources of electron donars

17. Which of these is a trace element for bacteria?

a. Mg^{+2} b. Na^{+}
c. Ca^{+2} d. Mn^{+2}

18. Virulent factor in pneumococcus is

a. Cell wall
b. Capsule
c. Mesosomes
d. Emdotoxins

19. The Bacteria move in response to magnetic field is

a. Spirochets
b. Treponema
c. Aquaspirillum Magnetotacticum
d. None of these

20. Nagler reaction detects

a. Corynebacterium diphtheriae
b. Clostridium tetani
c. Clostridium perfringens
d. Clostridium botulinum

21. The following organisms lack definite cell wall

a. Mycoplasma b. L-forms
c. Both a and b d. Bacteria

22. The following disease are caused by Mycoplasma except

a. Pneumonia in human beings
b. Little leaf of Brinjal
c. Dwarf disease of Mulbery
d. Citrus canker

23. Mycotoxins are produced by

a. Bacteria
b. Fungi
c. Algae
d. Protozoans

24. Size, shape and mode of arrangements is typical of certain microorganisms. Match them correctly :

1.	Streptococci	A.	Comma and S shaped form
2.	Sarcina	B.	Gram positive arranged in chains
3.	Bacillus Anthracis	C.	Multiples of eight
4.	Vibrios and Spirilla	D.	Large bacilli, rectangular and gram positive
		E.	Gram negative cocci
		F.	Rod shaped-acid fast

25. Match the following microorganisms with their respective characteristic A to E :

1.	Bacteria	A.	Much similar, contains one type of nucleic acid, do not reproduce by binary fission
2.	Rickettsia	B.	Parasites on bacteria, highly specific to one type of
3.	Viruses	C.	Living organism, unicellular, motile, microscopic and show reproduction
4.	Bacteriophages	D.	Grows in atmospheric oxygen, visible without microscope, produces, disease
		E.	Tiny microorganism, enable to grow outside living cells, retained by bacteria proof filters

ANSWERS

1. a	2. b	3. d	4. c	5. c	6. b
7. b	8. c	9. c	10. b	11. d	12. b
13. c	14. c	15. c	16. a	17. b	18. d
19. c	20. c	21. c	22. d	23. b	

24. 1.b, 2.c, 3.d, 4.a 25. 1.c,2 .e, 3.a, 4.b

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CHAPTER 5

BACTERIAL NUTRITION

1. The main product of glycolysis under aerobic conditions is

a. Pyruvate b. Lactate
c. None of these d. Both a and b

2. The protein moiety of an enzyme is known as

a. Holo enzyme b. Apo enzyme
c. Co enzyme d. Enzyme

3. Yeast extract is an excellent source of

a. A Vitamin b. Proteins
c. B Vitamin d. Carbohydrates

4. Example of anaerobic medium

a. Wilson blair medium
b. Mac conkey broth
c. Robertson's cooked meat medium
d. EMB agar

5. Biological Oxygen Demand (BOD) is a measure of:

a. Industrial wastes poured into water bodies
b. Extent to which water is polluted with organic compounds
c. Amount of carbon monoxide inseparably combined with haemoglobin
d. Amount of oxygen needed by green plants during night

6. An example of competitive inhibition of an enzyme is the inhibition of

a. Succinic dehydrogenase by malonic acid
b. Cytochrome oxidase by cyanide
c. Hexokinase by glucose-6-phosphate
d. Carbonic anhydrase by carbon dioxide

7. The following organisms have been proposed as sources of single cell protein

a. Bacteria b. Yeasts
c. Algae d. All the three

8. Nitrites are oxidized to nitrates by a microorganism

a. Nitrosomonas b. Nitrosococcus
c. Nitrobacter d. Azatobacter

9. The major constituents in agar are

a. Fats b. Aminoacids
c. Polysaccharides d. Polypeptides

10. Match the following expressions with their respective bacteria A to E:

1.	$K = \log (a/a - x) \times t^1$	A.	Temperature effect
2.	$K = C^n t$	B.	Watson's expression
3.	$K_1/K_2 = q(T_2-T_1)$	C.	Concentration of bactericide
4.	$x_2 = 4D\ t\ I_n\ (m_o/m)$	D.	Film coefficient
		E.	Fick's law

ANSWERS

1. a 2. b 3. c 4. c 5. a 6. a 7. d 8. c 9. c 10. 1.b,2.c,3.a,4.e

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CHAPTER 6

BACTERIAL GROWTH

1. Multiple antibiotic resistance is mediated by

a. Episome b. Plasmid
c. Colplasmid d. Both b and c

2. "Antagonism " is seen in

a. Lag phase b. Plasmids
c. Log phase d. None of these

3. the first phase of a growth curve is

a. Log phase b. Lag phase
c. γ phase d. Both a and b

4. In gram positive and gram negative bacteria the electron transport contains

a. Naphthquinone b. Plastoquinone
c. Ubiquinone d. Both a and b

5. Growth in a closed system, affected by nutrient limitation and waste product accumulation is called

a. Batch culturing b. Ascus
c. Fruiting body d. Sporangiosphore

6. Cells are active and synthesizing new protoplasm. This stage of growth is called

a. Lag phase b. Stationary phase
c. Log phase d. All of these

7. Which one of the following tissues can metabolize glucose, fatty acids and ketone bodies for ATP production?

a. Liver b. Muscle
c. Brain d. R.B.C

8. Which one of the following mineral elements play an important role in biological nitrogen fixation

a. Copper b. Magnesium
c. Zinc d. Molybdenum

9. Rapid bacterial growth phase is known as

a. Log b. Lag
c. Lack d. None of these

10. Clostridium welchii spore formation can be induced only on specified media such as

a. Wilson-Blair medium
b. Macconkey medium
c. Ellner medium
d. Thayee-Martion medium

11. Mycotoxins are formed during the end of

a. Lag phase b. Log phase
c. Death phase d. Stationary phase

12. Bacteria which need oxygen for growth are called

a. Thermophilic bacteria
b. Microaerophilic bacteria
c. Facultative anaerobic bacteria
d. Mycobacteria

13. pH required for the growth of bacteria is

a. 6.8 – 7.2 b. 5.6 – 8.2
c. 3.0 – 6.0 d. 8.0 – 14.0

14. Drug resistance in bacteria is mainly determined by factor:

a. F b. R
c. Col d. Lysogenic factor

15. The ion that is required in trace amounts for the growth of bacteria is

a. Calcium b. Magnesium
c. Cobalt d. Sodium

16. The most important vitamin for the growth of bacteria is

a. B-complex b. Vitamin A
c. Vitamin D d. Vitamin C

17. The principle in microbiological assays is

a. At certain range the concentration of growth factor will bear a linear relationship to the amount of nutrients added
b. Concentration of growth factor have a linear relationship with the growth of the organism
c. Both a and b
d. None of the above

18. If the source of energy for bacteria is from chemical compounds they are said to be

a. Phototrophs
b. Autotrophs
c. Chemotrophs
d. Chemolithotroph

19. In the synthesis of cell components the major element required is

a. Nitrogen b. Sulphur
c. Carbon d. Oxygen

20. For the formation of cell-components the elements required are

a. Nitrogen b. Oxygen
c. Sulphur d. All of these

21. For the synthesis of amino acids cysteine, cystine and methionine the element required is

a. Sulphur b. Oxygen
c. Nitrogen d. None of these

22. Sulphur can be utilized by bacteria in the form of

a. Organic compounds
b. Inorganic compounds
c. Elemental compounds
d. All of the above

23. Phosphorous is an essential component of

a. Nucleotides
b. Nucleic acids
c. Phospholipids and Heichoic acids
d. All the above

24. Trace elements are

a. Zn^{+2}, Cu^{+2}, Mn^{+2}
b. MO^{6+}, Ni^{2+}, B^{3+} and CO^{2+}
c. Both a and b
d. None of these

25. Most bacteria do not require the ion

a. Mg^{2+} b. Ca^{2+}
c. Na^{+} d. Fe^{+2}

26. Vitamin function as

a. Co-enzymes
b. Co-melecules
c. Building blocks of cell
d. None of these

27. The vitamin required for Lactobacillus species is

a. Riboflavin b. Niacin
c. Pyridoxine d. Folic acid

28. Vitamin K is necessary for the species

a. Lactobacillus spp.
b. Bacillus anthracis
c. Bacteroides melaninogenicus
d. All of these

29. The bacteria which are able to grow at 0°C but which grow at 20°C to 30°C, are known as

a. Psychrophiles
b. Facultative psychrophiles
c. Average psychrophiles
d. Mesophiles

30. Radical shifts can be prevented by adding

a. Acids b. Alkali
c. Buffer d. None of these

31. The orderly increase in the quantity of all the cellular components is known as

a. Reproduction b. Growth
c. Binary fission d. None of these

32. The most common mode of cell division in bacteria is

a. Binary fission
b. Transverse binary fission
c. Longitudinal binary fission
d. None of these

33. How much time a bacterium take for the complete duplication?

a. 30 min. b. 10 min.
c. 20 min. d. 25 min.

34. The generation time is

a. The time required for the cell to divide
b. The total division of the cell during its life time
c. The total no.of cells formed
d. None of these

35. In bacteria, the increase in population is in the manner

a. Geometric progression
b. Multiplication
c. Doubling
d. None of these

36. Physiologically the cells are active and are synthesizing new protoplasm in which stage of the growth in bacteria

a. Log phase b. Lag phase
c. Stationary phase d. None of these

37. The most active stage in the sigmoid curve of bacteria in which maximum growth is attained

a. Lag phase b. Stationary phase
c. Decline phase d. Log phase

38. Log-phase is also known as

a. Death phase b. Exponential phase
c. Lag-phase d. None

39. The no. of generations per hour in a bacteria is

a. Growth rate b. Generation time
c. Sigmoid curve d. None of these

40. In the sigmoid curve (or) growth curve of bacteria how many stages are there

a. 3 b. 4
c. 2 d. 5

41. The reproduction rate is equal to death rate in which stage

a. Decline phase b. Stationary phase
c. Lag phase d. Log phase

42. Minimum growth temperature is

a. The growth of organisms at lowest temperature
b. The lowest temperature at which the microorganisms grow
c. The maximum temperature at which the growth is stable
d. None of these

43. Optimum growth temperature is greater that 45°C is

a. Mesophiles b. Thermophiles
c. Psychrophiles d. None of these

44. The organisms which can grow both in presence and absence of oxygen

a. Aerobes
b. Anaerobes
c. Faculative anaerobes
d. Strict aerobes

45. The organisms which can grow best in the presence of a low concentration of oxygen

a. Aerophilic b. Microaerophilic
c. Aerobic d. Anaerobic

46. The compound that is added to the medium to absorb oxygen for the creation of anaerobic conditions

a. Sodium Thioglycollate
b. Nitrous acid
c. Citrate
d. None of these

47. The utilization of light energy to drive the synthesis of ATP is called as

a. Photolysis
b. Photophosphorylation
c. Photosynthesis
d. Respiration

48. During cyclic phosphorylation NADP is formed or not.

a. No NADP formation
b. No NADP utilization
c. NADP is converted into NADPH
d. All are correct

49. Cyclic phosphorylation is generally present in

a. Cyanobacteria b. Algae
c. Bacteria d. Plants

50. Non-cyclic photophosphorylation is also known as

a. Oxygenic photosynthesis
b. Photosynthesis
c. Anoxygenic photosynthesis
d. Photophosphorylation

51. The number of ATP molecules formed during cyclic phosphorylation are

a. One b. Two
c. Four d. Six

52. Artificial transformation in laboratory is carried out by treating the cells with

a. $MgCl_2$ b. $Cacl_2$
c. NaCl d. HCl

53. The process of formation of mesozygote is called

a. Meromixis b. Exozygote
c. Mitosis d. Meiosis

54. Which of the following organisms requires tryptophan for growth?

a. H.influenza b. Vibrio
c. Gonococci d. S.typhi

55. Tubercular bacilli grow best in

a. Absence of O_2 b. Presence of CO_2
c. Presence of O_2 d. None of these

56. Mycotoxins are formed during the end of

a. Lag phase b. Log phase
c. Death phase d. Stationary phase

57. Match the following growth characteristics with their respective temperature ranges A to E :

1.	Psychrotrophs	A.	Grows between 55 to 65°C
2.	Mesophils	B.	May survive above 60°C
3.	Thermophils	C.	Grow well between 25 to 45°C
4.	vegetable bacteria	D.	Grow below 25°C
		E.	Multiply slowly at 0-4°C

58. Match the following microorganisms with their respective sources A to E:

1.	Achrommobacter . spp	A.	Bread
2.	Aspergillus flavus	B.	Water supply
3.	Oscillatiria scytonema	C.	Meat
4.	Clostridium nigereticans	D.	Salad
		E.	Milk and cheese products

59. Match the following microorganisms with their respective appearance of colonies on bismuth Sulphite agar from A to E:

1.	Salmonella typhi	A.	Brown
2.	Salmonella choleraesuis	B.	No growth
3.	Shigella flexneri	C.	Green
4.	Escherichia coli	D.	Yellow
		E.	Black

60. The suitable temperature to transport viral culture is –

a. 30°C b. 5°C
c. 25°C d. 45°C
e. None of these

61. Growth curve does not include following phases of bacteria –

a. Decline phase b. Stationary phase
c. Lag phase d. Synchronous growth

62. Bacteria are more sensitive to antibiotics at which phase of growth curve?

a. Decline phase b. Stationary phase
c. Lag phase d. Log phase

ANSWERS

1. b	2. d	3. b	4. a	5. a	6. a
7. b	8. d	9. a	10. c	11. a	12. b
13. a	14. d	15. c	16. a	17. b	18. c
19. c	20. d	21. d	22. a	23. d	24. d
25. c	26. c	27. b	28. a	29. c	30. c
31. b	32. c	33. c	34. c	35. a	36. c
37. d	38. c	39. b	40. b	41. d	42. b
43. a	44. a	45. b	46. b	47. c	48. a
49. a	50. b	51. d	52. b	53. a	54. d
55. b	56. a	57. 1.b, 2.c, 3.d, 4.a		58. 1.e,2.a,3.b,4.c	
59.1.e,2.c,3.a,4.b		60. b	61. d	62. d	

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CHAPTER 7

STRUCTURE OF DNA & RNA

1. A peculiar cytochrome is observed in bacteria and it can react with molecular oxygen, what is it?

a. Cyt b b. Cyt c
c. Cyt d d. Cyt o

2. The genetic material in HIV is

a. ds DNA b. ss DNA
c. s RNA d. None of these

3. Which one of the following mutagens act only on replicating DNA?

a. Ethidium bromide
b. Nitrosogeranidine
c. Acridine orange
d. None of above

4. Poly A tail is frequently found in

a. Histone in RNA b. Bacterial RNA
c. eukaryotic RNA d. TRNA

5. Which of the following is an example of RNA virus?

a. SV 40
b. T_4 phage
c. Tobacco mosaic virus
d. Adeno virus

6. Genomic DNA is extracted, broken into fragments of reasonable size by a restriction endonuclease and then inserted into a cloning vector to generate chimeric vectors. The cloned fragments are called

a. Clones b. Genomic library
c. mRNA d. None of these

7. Transgenic animals are produced when GH gene fused with

a. MT gene b. GH
c. GRF d. FIX

8. In which medium the hydridoma cells grow selectively?

a. Polyethylene glycol
b. Hypoxanthine aminopterin thyminine
c. Hypoxathing-guaning phosphoribosyl transferase
d. Both b and c

9. The enzymes which are commonly used in genetic engineering are

a. Exonuclease and ligase
b. Restriction endonuclease and polymerase
c. Ligase and polymerase
d. Restriction endonuclease and ligase

10. A successful hybridoma was produced by fusing

a. Plasma cells and plasmids
b. Plasma cells and myeloma cells
c. Myeloma cells and plasmids
d. Plasma cells and bacterial cells

11. The technique involved in comparing the DNA components of two samples is known as

a. Monoclonal antibody techniques
b. Genetic finger printing
c. Recombinant DNA technology
d. Polymerase chain reaction

12. Plasmids are ideal vectors for gene cloning as

a. They can be multiplied by culturing
b. They can be multiplied in the laboratory using enzymes
c. They can replicate freely outside the bacterial cell
d. They are self replicating within the bacterial cell

13. Humans normally have 46 chromosomes in skin cells. How many autosomes would be expected in a kidney cell?

a. 46 b. 23
c. 47 d. 44

14. Pasteur effect is due to

a. Change from aerobic to anaerobic
b. Providing oxygen to anaerobically respiring structures
c. Rapid utilization of ATP
d. Nonsynthesis of ATP

15. A mechanism that can cause a gene to move from one linkage group to another is

a. Trans location b. Inversion
c. Crossing over d. Duplication

16. The smallest unit of genetic material that can undergo mutation is called

a. Gene b. Cistron
c. Replicon d. Muton

17. The two chromatids of metaphase chrosome represent

a. Replicated chromosomes to be separated at anaphase
b. Homologous chromosomes of a diploid set
c. Non-homologous chromosomes joined at the centromere
d. Maternal and paternal chromosomes joined at the centromere

18. Malate dehydrogenase enzyme is a

a. Transferase b. Hydrolase
c. Isomerase d. Oxido reductase

19. In E.Coli att site is in between

a. Gal and biogenes
b. Bio and niacin genes
c. Gal and B genes
d. None of these

20. The best vector for gene cloning

a. Relaxed control plasmid
b. Stringent control plasmid
c. Both a and b
d. None of these

21. A gene that takes part in the synthesis of polypeptide is

a. Structural gene b. Regulator gene
c. Operator gene d. Promoter gene

22. DNA replicates during

a. G1 – phase b. S – phase
c. G2 – phase d. M – phase

23. A human cell containing 22 autosome and a 'Y' chromosome is probably a

a. Male somatic cell
b. Zygote
c. Female somatic cell
d. Sperm cell

24. Crossing-over most commonly occurs during

a. Prophase I b. Prophase II
c. Anaphase I d. Telophase II

25. DNA-replication is by the mechanism of

a. Conservative b. Semiconservative
c. Dispersive d. None of the above

26. Production of RNA from DNA is called

a. Translation b. RNA splicing
c. Transcription d. Transposition

27. Nucleic acids contain

a. Alanine b. Adenine
c. Lysine d. Arginine

28. What are the structural units of nucleic acids?

a. N-bases b. Nucleosides
c. Nucleotides d. Histones

29. The most important function of a gene is to synthesize

a. Enzymes b. Hormones
c. RNA d. DNA

30. One of the genes present exclusively on the X-chromosome in humans is concerned with

a. Baldness
b. Red-green colour baldness
c. Facial hair/moustache in males
d. Night blindness

31. Peptide linkages are formed in between

a. Nucleotides
b. Amino acids
c. Glucose molecules
d. Sucrose

32. The nucleic acid of polio viruses is

a. DNA b. RNA – (+) type
c. t-RNA d. m-RNA

33. Rabies virus is

a. Nake RNA virus
b. Naked DNA virus
c. Enveloped RNA virus
d. Enveloped DNA virus

34. Example for DNA virus:

a. Polio virus b. Adeno virus
c. Echo virus d. Poty virus

35. In genetic engineering breaks in DNA are formed by enzymes known as

a. Restriction enzymes
b. Ligases
c. Nucleases
d. Hydralases

36. DNA transfer from one bacterium to another through phages is termed as

a. Transduction b. Induction
c. Transfection d. Infection

37. Microorganisms usually make acetyl CO-A by oxidizing

a. Acetic acid
b. Pyruvic acid
c. α-ketoglutaric acid
d. Fumaric acid

38. The method of DNA replication proposed by Watson and Crick is

a. Semi conservative
b. Conservative
c. Dispersive
d. Rolling loop

39. The distance between each turn in the helical strand of DNA is

a. 20 A° b. 34 A°
c. 28 A° d. 42 A°

40. Self-replicating, small circular DNA molecules present in bacterial cell are known

a. Plasmids b. Cosmids
c. Plasmomeros d. plastides

41. Western blotting is the technique used in the determination of

a. RNA b. DNA
c. Proteins d. All of these

42. m RNA synthesis from DNA is termed

a. Transcription b. Transformation
c. Translation d. Replication

43. Western blotting is a technique used in the determination of

a. DNA b. RNA
c. Protein d. Polysaccharides

44. Building blocks of Nucleic acids are

a. Amino acids b. Nucleosides
c. Nucleotides d. Nucleo proteins

45. DNA finger printing is based on

a. Repetitive sequences
b. Unique sequences
c. Amplified sequences
d. Non-coding sequences

46. The enzyme required for DNA from RNA template:

a. RNA polymerase
b. Reverse transcriptase
c. DNA polymerase
d. Terminal transferase

47. Double standard RNA is seen in

a. Reo virus b. Rhabdo virus
c. Parvo virus d. Retro virus

48. Example for DNA viruses:

a. Adeno virus
b. Bacteriophage T_1, T_2, T_3, T_4, T_5, T_6
c. Papova virus
d. Herpes virus and cauliflower moisaic
e. All of the above

49. The following are the RNA viruses, except

a. Reo viruses
b. Retro viruses
c. Bacteriophage Φ C
d. Tmv and Bacteriophages Ms2, F2
e. Dahila mosaic virus and Bacteriophages Φ × 174, M12, M13

50. The two strands of DNA are joined non-covalently by

a. Ionic bonds
b. Covalent bonds
c. Hydrogen bonds between bases
d. Polar charges

51. The bases Adenine and Thymine are paired with

a. Double hydrogen bonds
b. Single hydrogen bonds
c. Triple hydrogen bonds
d. Both b and c

52. The no. of hydrogen bonds existing between Guanine and Cytosine are

a. 5 b. 2
c. 3 d. None of these

53. The length of each coil in DNA strand is

a. 15 A° b. 34 A°
c. 30 A° d. 5 A°

54. Nucleic acids are highly charged polymers due to

a. There is phosphodiester bond between 5′-hydroxyl of one ribose and 3′–hydroxyl of next ribose
b. They have positive and negative ends
c. Nucleotides are charged structures
d. Nitrogenous bases are highly ionized compounds

55. The best studied example for specialized transduction is

a. P_1 phage b. P_{22} phage
c. ë-phage d. Both a and c

56. The diagrammatic representation of the total no. of genes in DNA is

a. Genome b. Gene map
c. Gene-structure d. Chromatin

57. During specialized transduction

a. Large amound of DNA is transferred
b. A few no. of genes are transferred
c. Whole DNA is transferred
d. None of these

58. The cell donating DNA during transformation is

a. Endogenate b. Exogenate
c. Mesozygote d. Merosite

59. Genetic information transfer DNA to RNA is called –

a. Transcriptase b. Transduction
c. Transformation d. Recombination

60. The gene transfer occurs by –

a. Transformation b. Transduction
c. Conjugation d. Cell fusion

ANSWERS

1. d	2. a	3. c	4. c	5. c	6. b
7. a	8. b	9. a	10. b	11. b	12. d
13. d	14. b	15. a	16. d	17. a	18. d
19. a	20. a	21. a	22. b	23. b	24. a
25. b	26. c	27. b	28. c	29. a	30. b
31. b	32. b	33. c	34. b	35. b	36. a
37. a	38. a	39. b	40. a	41. b	42. a
43. a	44. c	45. b	46. b	47. a	48. e
49. e	50. c	51. a	52. c	53. b	54. a
55. c	56. b	57. b	58. b	59. a	60. a

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CHAPTER 8

IMMUNOLOGY

1. Which of the following is called serum Hepatitis?

a. HCV b. HAV
c. HBV d. HIV

2. Which of the following was a non-neural vaccine for rabies?

a. HEPV b. Card vaccine
c. BPL d. Simple

3. Which type of antibodies will associate in blood cell coagulation?

a. IgE b. IgA
c. IgM d. IgG

4. In a antigen haptens are

a. Immunogenic b. Non-immunogenic
c. Antigenic d. None of these

5. The antibody that is first formed after infection is

a. IgG b. IgM
c. IgD d. IgE

6. Antibodies in our body are produced by

a. B-lymphocytes b. T-lymphocytes
c. Monocytes d. RBC's

7. The points at which crossing over has taken place between homologus chromosomes are called

a. Chiasmata
b. Synaptonemal complex
c. Centromeres
d. Protein axes

8. How much of globulin is present in human serum?

a. 8% b. 12%
c. 16% d. 4%

9. The substance which acts as anti-metabolites are called

a. Activators b. Substrates
c. Inhibitor d. Cofactor

10. Enzymes are chemically

a. Lipids b. Proteins
c. Carbohydrates d. None of these

11. Monoclonal antibodies are produced by

a. Hybridoma technology
b. Biotechnology
c. Fermentation Technology
d. None of these

12. First line of body defence is

a. Antibody molecules
b. Unbroken skin
c. Antigen molecules
d. Phagocytic cells

13. What is the strength of the bond between antigen and antibody?

a. Affinity b. Avidity
c. Covalent d. None of these

14. Syphillis is caused by

a. Staphylococcus aureuss
b. Yersinia psdtis
c. Treponema pallidum
d. Streptococcus syphilitis

15. Nergibodies produced by rabies virus show characteristic _____ inner granues

a. Basophilic b. Eosinophilic
c. Neutrophilic d. Acidophilic

16. The widely used yeast for the production of single cell protein is

a. Saccharomyces cerevisiae
b. Rhizopus
c. Candida utilis
d. All of the above

17. Analysis of protein antigen is by

a. Southern blot b. Northern blot
c. Western blot d. None of these

18. Which of the following can provide naturally acquired passive immunity for the new born.

a. IgA b. IgG
c. IgE d. IgM

19. AIDS disease is caused by a virus which belongs to

a. Retro virus group
b. Rhabdo virus group
c. Hepatitis virus group
d. Adeno virus group

20. Complement based agglutination reaction is known as

a. Haem agglutination
b. Coplement fixation
c. Conglutination
d. Schultz Dale Phenomenon

21. Reverse transcriptase is an enzyme involved in the synthesis of

a. DNA b. Soluble RNA
c. m-RNA from DNA d. Nucleotides

22. The cellular immune response is mediated by

a. B cells b. T cell
c. BT cells d. Endothelial cells

23. The major immunoglobulin present in the human serum is

a. IgG b. IgA
c. IgE d. IgG

24. Reagenic type antibody is

a. IgG b. IgA
c. IgM d. IgE

25. Blood group antigens are

a. Species specific b. Isospecific
c. Autospecific d. Organ specific

26. The reaction of soluble antigen with antibody is known by

a. Precipitation b. Flocculation
c. Agglutination d. Complement fixation

27. Interferon is composed of

a. Lipids b. Lipoprotein
c. Glycoprotein d. Nucleic acid

28. Agglutination reaction is strongest with the immunoglobulin:

a. IgM b. IgG
c. IgA d. IgD

29. The use of monoclonal antibodies is

a. Immunotherapy b. Gene therapy
c. Blood transfusion d. Organ transfusion

30. Hybridoma technique is used for

a. Monoclonal antibodies
b. Polyclonal antibodies
c. Both a and b
d. None of these

31. Test used for AIDS is

a. Widal test b. ELISA
c. Aggluatination d. CFT

32. Antibody having high valency is

a. IgG b. IgA
c. IgD d. IgM

33. Intensity of attraction between antigen and antibody molecule is known as

a. Affiniy b. Avidity
c. Reaction d. None of these

34. Active immunity is induced by

a. Infection
b. Placental transfer of antibodies
c. Injection of antibodies
d. Injection of gamma- globulins

35. Pasteur developed the vaccines for

a. Anthrax b. Rabies
c. Chicken cholera d. All of the above

36. Delayed type of hypersensitivity is seen in

a. Penicillin allergy b. Contact dermatitis
c. Arthus reaction d. Anaphylaxis

37. The following are used for the preservation of virus, except

a. Freezing (–20°C–70°C)
b. Lyophilization
c. Ether
d. Formaldehyde

38. Antibody formation depends on

a. Age of the person
b. Amount of antigen
c. Well being of the person
d. All of the above

39. Local immunity is important in

a. Influenza b. Allergy
c. Polio d. All of these

40. Role of magnesium in vaccine is

a. Adjuvant b. Stabilizer
c. Conditioner d. All of these

41. Immunity is life long following

a. Diphtheria b. Tetanus
c. Measles d. Yellow fever

42. To prepare vaccine for small pox, the material used by Edward Jenner is

a. Small pox material b. Chicken pox material
c. Cow-pox material d. Measles material

43. During recombination, the strain that donates genetic material frequently with high rate:

a. Hfr-Strain b. F+-Strain
c. F-Strain d. both a and c

44. The character acquired by the cell due to recombination is

a. Inheritable b. Syppressed
c. Dominating d. Heritable

45. T-cells are produced from

a. Bonemarrow b. Thymus
c. Spleen d. None of these

46. Antibodies are produced from

a. T-cells b. â-cells
c. NK cells d. Eosinophils

47. Incomplete antigens are called

a. Immunogens b. Epitomes
c. Haptens d. Paratope

48. To be antigen, the chemical molecule (protein) needs

a. High molecular weight
b. Chemical complexity
c. Both a and b
d. None of these

49. The parts which filter lymph are

a. Lymph nodes b. Spleen
c. Thymus d. Bone marrow

50. The primary cells involved in immune response are

a. NK-cells b. K-cells
c. Lymphocytes d. None of these

51. Plasma cells are the end cells of

a. T-cells b. β-cells
c. Killer cells d. Nk-cells

52. Basophils have receptors for antibodies

a. IgG b. IgA
c. IgM d. IgE

53. Because of denaturation, antigens become functionless, these are called:

a. Cross-reactive antigens
b. Epitopes
c. Hidden epitopes
d. Forssman antigens

54. Capacity of antigen to breakdown into small fragments eachwith a single epitopic region is known as

a. Solubility b. Froeignness
c. Denaturation d. None of these

55. Antigenic specificity is due to

a. Chemical complexity
b. Solubility
c. Steric configuration
d. All of these

56. Antibodies are

a. Proteins b. Glycoproteins
c. Phospholipids d. None of these

57. General purpose antibody is

a. IgA b. IgG
c. IgM d. IgD

58. Antibody present in colostrums is

a. IgG b. IgA
c. IgM d. IgE

59. Which antibody is called millionaire molecule?

a. IgA b. IgM
c. IgG d. IgD

60. IgE is discovered by

a. Ishizaka b. Porter
c. Richet d. None of these

61. Antigen-antibody reactions are

a. Reversible b. Irreversible
c. Specific d. Both a and b

62. Serological reactions are useful for

a. Detection of antigens
b. Detection of antibodies
c. Both a and b
d. None of these

63. For the separation of antigens the method used is

a. Immunoelectrophoresis
b. Flocculation
c. Agglutination
d. None of these

64. Counter immunoelectrophoresis is useful for detection of

a. One antigen/antibody
b. Two antigens/antibody
c. More than two
d. None of these

65. When a particular antigen is mixed with antibody in the presence of an electrolyte at suitable temperature and pH the particles are clumped, this is called:

a. Precipitation b. Agglutination
c. Electrophoresis d. CIE

66. Toxins and viruses can be detected by

a. Precipitation b. Agglutination
c. Neutralisation d. None of these

67. Which is most antigenic?

a. Exotoxins b. Endotoxins
c. Viruses d. All of these

68. Shick test is used for the detection of

a. Diphtheria b. T.B.
c. Cholera d. Typhoid

69. Secondary function of complements are

a. Haemolysis b. Phagocytosis
c. Both a and b d. None of these

70. Very effective, less time consuming and at a time so many samples can be detected by

a. ELISA b. CFT
c. Neutralization d. Agglutination

71. â-cells are involved in

a. Humoral immunity
b. Cell-mediated immunity
c. Active immunity
d. Passive immunity

72. Innate immunity is

a. Specific b. Non-specific
c. Active d. Passive

73. Innate immunity is developed by

a. Mechanical barriers
b. Chemical barriers
c. Both a and b
d. None of these

74. Acquired immunity is

a. Natural b. Artificial
c. Active & Passive d. All of these

75. Acquired immunity can be developed by

a. Natural means b. Artificial means
c. Both a and b d. None of these

76. Immediate type hypersensitivity reactions are

a. Type-I b. Type-II
c. Type-III d. All a, b and c

77. Immediate type of hypersensitivity reactions are mediated by

a. T-cells b. β-cells
c. Mast cells d. Macrophages

78. Example for cell-mediated immunity are

a. Tuberculin type b. Contact dermatitis
c. Granulomatous d. All of these

79. Mountax reaction is used for detection of

a. T.B. b. Diphtheria
c. Cholera d. None of these

80. All the antibodies produced from a â-cell are having

a. Similar specificity b. Different specificities
c. Similar size d. None of these

81. Hybridoma formation in hybridoma technique is from

a. Spleen cell – Myeloma cell
b. Spleen cell – Spleen cell
c. Myeloma cell – Myeloma cell
d. None of these

82. Anthrax vaccine is prepared by

a. Attenuated bacilli
b. Killing the bacilli
c. Live bacilli
d. None of these

83. Attenuated, oral poliomyelitis vaccine is

a. BCG
b. Measles vaccine
c. Sabin vaccine
d. TAB vaccine

84. Killed, polio vaccine is

a. Sabin vaccine b. Salk
c. BCG d. TAB

85. Measles vaccine is given to children at the age of

a. 1 year
b. 7 months
c. between 9 months and 10 years
d. None of these

86. Pertussis vaccine is

a. Heat killed b. Formalin killed
c. Attenuated d. live

87. DPT is

a. Triple vaccine b. Double vaccine
c. Tetanus toxoid d. All of these

88. DPT, is used as vaccine for

a. Diphtheria b. Pertussis vaccine
c. Tetanus toxoid d. All of these

89. DPT is given to children at the age of 16-24 months, as the dose is

a. 0.5 ml at intervals of 4 weeks
b. A booster dose of 0.5 ml
c. Both a and b
d. None of these

90. If more than one kind of immunizing agent is included in the vaccine, it is

a. Cellular vaccine
b. Recombinant vaccine
c. Mixed vaccine
d. Toxoid vaccine

91. Vaccines are prepared from killed microbes, they are

a. Inactivated (killed) vaccine
b. Attenuated vaccines
c. Autogenous vaccine
d. None of these

92. Vaccines used against viral infections are

a. Measles and Mumps vaccine
b. Cholera vaccine
c. Typhoid vaccine
d. Anti-rickettsial vaccine

93. If the microbes used in the vaccine are obtained from patient, they are

a. Anti viral vaccines
b. Anti bacterial vaccines
c. Autogenous vaccines
d. None of these

94. Vaccines prepared from toxins and chemicals are

a. Cellular vaccines
b. Sub-cellular vaccines
c. Attenuated vaccines
d. Heterologous vaccines

95. Example for live vaccine is

a. Rubella & BCG
b. Polio & TAB
c. Diphtheria & Tetanus
d. Hepatitis A & Rabies

96. DPT is given for the prevention of

a. Diphtheria, Tetanus
b. Diphtheria, Pertusis
c. Diphtheria, Tetanus & pertusis
d. None of these

97. The live vaccines are available against the following viruses, except:

a. Influenza b. Measles
c. Rabies d. Polio

98. HIV can be transmitted through

a. Blood b. Semen
c. Vaginal fluid d. All of these

99. Match the following terms with their respective definitions A to E used in virology :

1.	Haemagglutination	A.	A phenomenon of acquiring resistance to infection by a infection by a second virus
2.	Virus titre	B.	A virus does not cause cytopathogenic changes in tissue culture
3.	Virus interference	C.	Determination of the number of infective units in the virus suspension
4.	Interferon	D.	A substance by which viruses can attack themselves to red blood cells
		E.	Substance used to destroy virus

100. Match the following vaccines with their respective contents A to E:

1.	Typhoid vaccine	A.	Killed rickettsia
2.	Typhus vaccine	B.	Killed bacteria
3.	Measles vaccine	C.	Attenuated viruses
4.	Smallpox	D.	Killed viruses
		E.	Attenuated bacteria

101. Match the following immunglobulins with their respective occurrences A to E:

1.	IgM	A.	In the seromucous secretions
2.	IgG	B.	After the primary antigenic stimulus
3.	IgA	C.	Synthesized during secondary response
4.	IgE	D.	Plasma
		E.	Serum

102. Match the following viral vaccines with their source materials A to E:

1.	Influenza	A.	Fluid from cultures of human diploid cells
2.	Rabies	B.	Dermal scraping from infected animals
3.	Smallpox	C.	Allantoic fluid from fertile hen's eggs
4.	Yellow fever	D.	Fluid from cultures of rabbit kidney
		E.	Aqueous homogenate of chick embryo

103. Animals are naturally immune to infection caused by

a. V. Cholera b. S.typhosa
c. Both a and b d. None of these

104. The immunity acquired by inoculation of living organism of attenuated virulence is

a. Artificial active immunity
b. Passive immunity
c. Natural active immunity
d. Local immunity

105. Organisms can be attenuated for inoculation by

a. Growing it at a temperature higher than optimum
b. By passage through animals of different species which are less susceptible to it
c. By continous cultivation in presence of antagonistic substance
d. Any one of the above
e. None of these

106. Passive immunity lasts for the period of about

a. 10 days
b. 2 – 3 months
c. 10 years
d. None of the above

107. The markers helpful in detecting anti-immunity are

a. Hyper gamma globulinaemia
b. Circulating antibodies
c. Response to cortisone
d. Lymphoid hyperplasia
e. All of these

108. Following substance may act as an antigen

a. Egg albumin
b. RBC and serum
c. Vegetable protein
d. Snake venom
e. All of these

109. H antigen are present in

a. Motile organ
b. Non-motile organ
c. Both a & b
d. None of these

110. Antitoxin is used for _____ immunization.

a. Active
b. Passive
c. Both a and b
d. None of these

111. The agglutinin test is used for _____

a. Identification of isolated bacteria
b. Typing of bacterial species
c. Study of antigenic structure of bacteria
d. All of these
e. None of these

112. In blood transfusion it is essential that

a. Blood of hologous group should always be same
b. Direct matching between patient's serum and donor's corpuscles be performed
c. Both a & b
d. None of these

113. To be anaphylactic, the sensitizing substance should be

a. Protein in nature
b. Should have a large molecular weight
c. Soluble in tissue fluids
d. All of the above
e. None of these

114. The basics of pathology in asthama, allergic rhinitis, urticaria are

a. Local vasodilation
b. Increased capillary secretion
c. Excess eosinophils in tissue secretion and blood
d. All of these

115. Which test is used for detecting susceptibility of an individual to diphtheria toxin?

a. Schick tests
b. Dick test
c. V-P test
d. Precipitin test

116. Syndromes associated with Human T lymphotropic virus type I(HTLV-I) are

a. Adult T-cell lymphoma
b. Hairy cell leukemia
c. Adult T cell leukemia
d. All of these

117. Plague and Tularemia vaccine can be prepared from

a. Chemical fraction of the causative bacteria
b. Heat killed suspension of virulent bacteria
c. Formalin inactivated suspension of virulent bacteria
d. Avirulent live bacteria
e. All of these

118. AIDS patients suffer from pneumoniae due to

a. Pneumocystisis carinii
b. Cryptospodidium
c. S.pneumoniae
d. Toxoplasma

119. Statements applicable to human lice:

a. Cause pruritic skin lesions.
b. Are wingless
c. Transmit epidemic typhus, relapsing fever and Trench fever
d. Pediculus humanus and phthirus pubis are two species
e. All of these

120. Natural killer cells

a. Belongs to B-cell lineage
b. Belongs to T-cell lineage
c. Display cytotoxic effect on tumour cell
d. Require previous antigen exposure for activation

121. Immunoglobulin is associated with anaphylactic delayed hypersensitivity reaction

a. IgE b. IgA
c. IgD d. IgM
e. IgG

122. The most abundant antibody found in serum is

a. IgA – 1 b. IgG – 1
c. IgG – 2 d. IgG – 3
e. IgG – 4

123. Patients suffering from AIDS have following immune abnormalities

a. Decreased CD4 + T cells
b. Increased CD8 + T cells
c. Hypergammaglobulinemia
d. CD4 +/CD8 + ratio greater than 21
e. Both b & d

124. Immunoglobulin which cannot activate complement

a. IgM b. IgE
c. IgA d. IgG

125. Hydatid disease is identified by

a. Schick test b. Dick test
c. Casoni test d. Freis test

126. Prausnitz kustner reaction is generated by

a. IgA b. IgE
c. IgG d. IgD

127. Immunoglobin which are found in asthma at elevated level:

a. IgA b. IgE
c. IgM d. IgD

128. What is the similarity between IgM & IgG?

a. A compliment fixation
b. Placental transport
c. Heat stability at 56°C
d. Sedimentation coefficient

129. What is the technique for quantitative estimation of immunoglobulin?

a. Single diffusion in one dimension
b. Single diffusion in two dimension
c. Double diffusion in one dimension
d. Double diffusion in two dimension

130. Cell mediated immunity can be identified by

a. Sheep bred blood corpuscles roasette formation
b. Microphase inhibiting factor
c. Skin test for delayed hyper sensitivity
d. All of these

131. Out of the following which are the examples of autoimmune disease?

a. Acquired Haemolytic anaemia
b. Rheumatoid arthritis
c. Hashiomoto disease
d. All of these

132. Which of the following is a true statement regarding Purified Protine Derivative (PPD) used in tuberculin test?

a. Prepared from tubercle bacilli
b. It is inferior to old tuberculin
c. Consists of filtrate of glycerol broth
d. None of these

133. Which of the following are inactive viral vaccines?

a. Influenzae
b. Rabies
c. Russian spring summer encephalitis
d. All of these

134. Antigenic variation is most extensive in

a. Influenza virus b. Small pox virus
c. Measles virus d. Herpes virus

135. Which is the correct statement related to hepatitis B virus?

a. Paramyxo virus b. Orthomyxo virus
c. Reo viruses d. Retro viruses

ANSWERS

1. c	2. a	3. c	4. b	5. b	6. a
7. a	8. a	9. c	10. b	11. a	12. b
13. b	14. c	15. a	16. c	17. c	18. b
19. a	20. a	21. a	22. a	23. a	24. d
25. b	26. a	27. b	28. a	29. a	30. a
31. b	32. d	33. a	34. a	35. d	36. b
37. c	38. d	39. d	40. b	41. c	42. c
43. a	44. d	45. b	46. b	47. c	48. c
49. a	50. c	51. b	52. d	53. c	54. a
55. c	56. b	57. b	58. b	59. b	60. a
61. d	62. c	63. a	64. a	65. b	66. c
67. a	68. a	69. c	70. a	71. a	72. b
73. c	74. d	75. c	76. d	77. b	78. d
79. a	80. a	81. a	82. a	83. c	84. a
85. c	86. b	87. a	88. d	89. c	90. c
91. a	92. a	93. c	94. b	95. a	96. c
97. c	98. d	99. 1.d, 2.c, 3.b, 4.a		100. 1.b, 2.a, 3.d, 4.c	
101. 1.b, 2.c, 3.a, 4.e		102. 1.c, 2.a, 3.b, 4.e			
103. c	104. a	105. d	106. a	107. e	108. c
109. a	110. b	111. d	112. c	113. b	114. e
115. a	116. b	117. e	118. d	119. e	120. c
121. a	122. a	123. e	124. b	125. c	126. b
127. b	128. a	129. b	130. d	131. d	132. a
133. d	134. a	135. c			

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CHAPTER 9

MEDICAL MICROBIOLOGY

1. Food poisoning is caused by

a. Clostridum tetani
b. Clostridum Welchi
c. Diptheria
d. Clostridium botulinum

2. Koplic's spots will develop in

a. HIV b. Measles
c. Mumps d. Rubella

3. Viral DNA is resistant to DNA of the host cell because it contains

a. 5'-HMC b. 5'-HMA
c. 5'-CHM d. 5'MHC

4. Which of the following is an example of live vaccine?

a. pertusis b. mumps
c. cholera d. rabies

5. Triple toxoid vaccine gives protection against

a. Diphtheria, tetanus and rabies
b. Tetanus, whooping cough, Tuberculosis
c. Whooping cough, tetanus and Diphtheria
d. Whooping cough, cancer and T.B.

6. Higher does of chloramphenicol affects the eukaryotic cells because

a. They have 30 S ribosomes
b. They have mitochondria
c. They have 70 S ribosomes
d. None of the above

7. AIDS is caused by

a. Retrovirus b. Prion
c. Rhabdovirus d. Retroprison

8. Penicillin is a

a. Primary metabolite b. Secondary metabolite
c. Tertiary metabolite d. None of the above

9. The rejection of an organ transplant such as a kidney transplant, is an example of _____ Hypersensitivity.

a. Immediate b. Delayed
c. Allergy d. None of these

10. Listeriosis was _____ disease.

a. Food borne b. Water borne
c. Milk borne d. Air borne

11. Pus-forming forms are called as

a. Pyoderm b. Pyogenic
c. Pyrogen d. None of the above

12. In Elisa technique, the antibodies are labeled by

a. Acridine orange b. Alkaline phosphate
c. Neutral red d. Bromothymol blue

13. _____ is a genetic disease charachterized by a total or partial inability to synthesize globulins.

a. Apitososis
b. Agamma globulinemia
c. Gammaglobulinemma
d. Sickle-cell anemia.

14. A study involving analysis of risk for genetic defects in a family is

a. Genetic Engineering
b. Genetic counseling
c. Genetic drift
d. Genetic equilibrium

15. Viral antigens are likely

a. Proteins b. Glyco proteins
c. Lipo proteins d. Both a and b

16. The suitable assay method for antibiotics is

a. Enzymatic assay
b. Turbidometric assay
c. End point determination assay
d. Metabolic assay

17. ELISA test is used for the identification of

a. Janudice b. AIDS
c. Cancer d. Diabetis

18. Incubation period for infective Hepatitis disease

a. 45 – 80 days b. 15 – 35 days
c. 35 – 50 days d. 5 – 15 days

19. All of the following are bacteriostatic chemotherapeutic agents except

a. Bacitracin b. Chloramphenicol
c. Novobiocin d. Tetracycline

20. Kinetosomes are observed in

a. Algae b. Fungi
c. Protozoa d. Viruses

21. β-lactum ring is present in

a. Erythromycin b. Penicillin
c. Tetracyclins d. Chromphenical

22. Antibiotic produced from streptomyces orientalis is

a. Streptomycin b. Penicillin
c. Vancomycin d. Both a and b

23. The drug of choice for dermal, oral and vaginal candidiasis is

a. Griseofulvin b. Amphoterein B
c. Gentian violet d. Nystatin

24. Botulism means

a. Food adultration
b. Food poisioning by streptococcus bacteria
c. Chemical contamination of food
d. Food processing

25. Chloramphenicol is obtained from

a. Streptomyces griseus
b. Streptomyces venezuelae
c. Streptomyces pyrogenes
d. None of these

26. Streptomycin is obtained from

a. Streptococcus species
b. Streptomyces griseus
c. Straphylococcus aureus
d. None of these

27. The treatment required for small bodies of water is

a. Disinfection b. Filtration
c. Purification d. All of these

28. Surface ropiness is caused by

a. Alkaligenes viscolactis
b. Streptococcus
c. both a and b
d. None of these

29. Septicaemia is

a. Bacteria in blood
b. Toxin in blood
c. Pus in blood
d. Multiplication of bacteria and toxins in blood

30. In AIDS, Kaposis sarcoma may respond to

a. Interleukin – 2 infusion
b. Azathioprine
c. Alpha interferon
d. None of these

31. Ciprofloxacin acts by inhibiting

a. Cellwall synthesis
b. RNA synthesis
c. Folate synthesis
d. DNA gyrase

32. Lyme disease is caused by

a. Bacteria b. Fungi
c. Spirochaete d. Virus

33. Toxic shock syndrome is caused by

a. Staph. albus b. Staph. aureus
c. Strep. viridana d. None of these

34. Black water fever is caused by

a. P. vivax b. P. falciparum
c. P. ovale d. None of these

35. Mantoux test detects

a. M. tuberculosis b. Cynaobacteria
c. Clostridia d. Both a and b

36. The antibiotic acting on cell wall is

a. Bactracin b. Penicillin
c. Cyclosporine d. All of these

37. Aflatoxin is produced by

a. Aspergillus sps b. Penicillium sps
c. Alternaria sps d. None of these

38. Penicillin is discovered by

a. Fleming b. Pasteur
c. Koch d. None of these

39. Antibiotics used in combination may demonstrate

a. Synergism b. Antaginism
c. both d. None of these

40. The drug of choice in anaphylactic shock is

a. Histamine b. Corticosteroid
c. Epinephrine d. None of these

41. Drugs of choice for treatment of Mycoplasma infections:

a. Tetracyclines b. Erythromycin
c. a and b d. Penicillins

42. A number of viruses are known to infect mycoplasmas, called

a. Bacteriophages
b. Mycoplasma phages
c. Virions
d. Tiny strains

43. The following are true about Rickettsiae.

a. Unicellular organisms
b. Prokaryotic intracellular parasites
c. Presence of 70 S ribosomes
d. It causes hemolysis in human beings
e. Gram negative plemorphic rods

44. The causative agent of scrub typhus:

a. R.Quintana b. R.rickettsii
c. R.orinetalis d. R.prowazekii

45. Lymphogranuloma venerum (LGV) is a sexually transmitted disease is caused by

a. Copthalmia b. C.trachomatis
c. C.pneumonias d. C.psittasi

46. Intradermal test employed for diagnosis of LGV is

a. Frei test b. Mantoux test
c. Schick test d. Dick test

47. Which algae is pathogenic to human?

a. Cephaloeuros b. Ulothrix
c. Macrocystis d. Prototheca

48. Erythromycin is obtained from

a. S.griseus b. S.rimosus
c. S.scabies d. S.erythraeus

49. Common cold is caused by

a. Adeno virus b. Corono virus
c. Hepatitis virus d. Pox virus

50. The causative agent of conjunctivitis:

a. Adeno virus b. Corono virus
c. Paramyxo virus d. None of these

51. Antibiotics used for treatment of cholera are

a. Tetracyclines b. Penicillins
c. Streptomycines d. None of these

52. Salmonella typhi is causative organism of

a. Undulent fever b. Remittent fever
c. Dengue fever d. Enteric fever

53. Which of the following Salmonella paratyphi is the commonest in India?

a. A b. B
c. C d. None of these

54. In enteric fever, the organ lodging maximum number of the organism is

a. Liver b. Gall bladder
c. Small intestine d. Large intestine

55. True about Enteric fever is

a. Bacteraemia in first week
b. Carrier in 90%
c. All serotypes cause the disease
d. Rosy spots on 18th day

56. Gastroenteritis is caused by

a. Shigella
b. V.cholerae
c. V.cholera Parahaenolyticus
d. S.typhi

57. E.coli produces the following toxins:

a. Enterotoxins b. Endotoxins
c. Verocytotoxins d. Hemolysins

58. The following infections caused by Esch. Coli, except

a. Urinary tract infections
b. Septic infections of wounds
c. Diarrhoea
d. Dysentery
e. Meningitis

59. Diphtheria is caused by

a. Corynebacterium diphtheriae
b. C. Bovis
c. C. Jeikeium
d. C. equi

60. Causative organism of diphtheria was first demonstrated by

a. Robert Koch b. Lois Pasteur
c. Klebs and Loeffler d. Volhard and Fahr

61. Coryne bacterium is

a. Gram positive
b. Resistant to Penicillin
c. Gram negative
d. Resistant to Chloramphenicol

62. C. diphtheriae consists of

a. Startch granules
b. Polymeta phosphate granules
c. Lipid granules
d. None of these

63. The incubation period of diphtheriae is

a. Upto 2 weeks b. Upto 1 week
c. 2–4 weeks d. None of these

64. Diphtheria virulence test is

a. Ascoli's thermoprecipitation test
b. Eleck's gel precipitation test
c. C.R.P test
d. M.R.T. test

65. Diptheria toxoid is prepared by using

a. Aldehyde b. Formalin
c. Phenols d. None of these

66. Diphtheria is an example of

a. Bacteraemia b. Pyaemia
c. Septicemia d. Toxaemia

67. Main symptom of tuberculosis is

a. Tubercle formation b. Liquid formation
c. Both a and b d. None of these

68. BCG vaccine is for the prevention of

a. Brucellosis b. Diphtheria
c. Botulism d. Tuberculosis

69. Dose of BCG vaccine is

a. 0.2–0.5 ml b. 0.1 ml
c. 0.05 ml d. 0.2 to 0.3 ml

70. Negative Mantoux test is important in

a. Pulmonary Koch's syndrome
b. Sarcoidosis
c. Carcinoma bronchus
d. Lymphoma

71. Bacilli Calmette Guerin (BCG) contains the avirulent strains of

a. Human tubercle bacilli
b. Avian tubercle bacilli
c. Bovine tubercle bacilli
d. A typical mycobacteria

72. Drugs used against tuberculosis (TB) are

a. Refampicin, Isoniazid
b. Pyrazinamide, Streptomycin
c. Both a and b
d. None of these

73. The greatest number of tubercle bacilli is present in

a. Large sized tuberculomas
b. Miliary tuberculosis
c. Tuberculous lymphadinitis
d. Tuberculous cavity of the lung

74. Histoid Hansen is a veriety of

a. Tuberculoid Leprosy
b. Borderline tuberculoid
c. Borderline lepramatous
d. Lepronmetous leprosy

75. Streptococcus pyogens produces all of the following lesions, except

a. Impetigo contagiosa
b. Erysipeals
c. Boil
d. Paronchia

76. Causative agent of Scarlet fever:

a. Staphylococcus aureus
b. Streptococcus viridans
c. Stre. pyogens
d. None of these

77. Rheumatic fever is most commonly caused by

a. Str. viridans b. Str. pyogenes
c. Stph. aures d. None of these

78. Penicillin is the drug of choice for

a. Scarlet fever b. Whooping cough
c. Brucellosis d. Cholera

79. In human being str. pneumoniae causes

a. Septicaemia b. Paronychia
c. Pneumomnia d. None of these

80. Virulence factor for Stre. pneumoniae:

a. Capsular polysaccharide
b. Specific soluble substance
c. Vi-antigen
d. Forsmann antigen

81. Conjunctivitis in a new born is caused by

a. Streptococcus b. Pneumococcus
c. Meningococci d. None of these

82. Influenza is belonging to

a. Orthomyxoviridae b. Retroviridae
c. Both a and b d. None of these

83. Influenza virus contains

a. Eight segments of RNA
b. Two strands of RNA
c. Single RNA
d. None of these

84. 'Reye's syndrome' is caused by

a. St.pneumoniae b. St.pyogenes
c. Influenza d. None of these

85. Geraman measles is also known as

a. Rubella / 2-day measles
b. Rubella / 3day measles
c. Rubella / 4-day measles
d. Rubella / 1-day measles

86. The commonest cause of rubella in new bornes

a. Congential rubella
b. Post natal rubella
c. Expanded rubella syndrome (ERS)
d. Both a and c

87. Mumps virus is belonging go

a. Retroviriae b. Paramyxoviriae
c. Orthomyxo viridae d. None of these

88. Measles is characterized by

a. Negribodies
b. Babes-Ernest granules
c. Koplik's spots
d. Fever

89. Brucella causes

a. Pertusis b. Plague
c. Brucellosis d. None of these

90. Mediterranian fever is caused by

a. M. tuberculosis b. S. typhi
c. C.neoformans d. Brucella

91. Which of the following test is specific for Brucellosis?

a. Frei b. Weil
c. Castaneda strip d. Rose water

92. Malignant pustule is caused by

a. Anthrax b. Tetanus
c. Diphtheria d. None of these

93. The commonest form of anthrax in man is

a. Alimentary b. Cutaneous
c. Pulmonary d. Hepatic

94. The animals most frequently infected with anthrax are

a. Sheep b. Cattle
c. Goats d. All of these

95. Virus causing Rabies is

a. Orthromyxo virus b. Paramyxo virus
c. Rhbdo virus d. Toga viruses

96. Rhabdo viruses are belonging to the family:

a. Rhabdo viridae b. Toga viridae
c. Paramyxo viridae d. None of these

97. Rabies Virus isolated from natural human or animal infection is termed as

a. Street virus b. Fixed virus
c. Both a and b d. None of these

98. Rabies virus can multiply in

a. The central nervous system only
b. The peripheral nerves
c. Muscle tissues
d. All the above

99. Neurological complications following rabies vaccines is common with

a. Chick embryo vaccine
b. HDCS vaccine
c. Semple vaccine
d. BPL vaccine

100. Which anti rabic vaccine has been recommended by WHO as the most effective?

a. Duck embryo vaccine
b. HDCS vaccine
c. Sheep brain vaccine
d. BPL vaccine

101. The causative agent of tetanus is

a. Clostridium botulinum
b. Cl. tetani
c. Cl. welchii
d. Cl. perfringens

102. The mode of spread of tetanus neurotoxin from blood to brain is

a. Via lymphaties
b. Arterial blood
c. Cranial nerves
d. None of these

103. Tetanus is caused by spread of

a. Exotoxin in sympathetic system
b. Exotoxin in para sympathetic system
c. Endotoxin in sympathetic system
d. Endotoxin in parasympathetic system

104. The first symptom of tetanus is

a. Lock jaw b. Trismus
c. Anorexia d. Dyspagia

105. Of which clostridia, the neurotoxin is most powerful?

a. Cl. tetani b. Cl. welchii
c. Cl. botulism d. Cl. septicum

106. Toxin produced by C. botulism is

a. Botulin b. Tetanospasmin
c. Tetanolysin d. Cholaragen

107. "Toxic shock syndrome" is caused by the toxin of

a. Staphylococcus aureus
b. Streptococcus pyoge
c. Vibrio cholerae
d. Candida

108. Causative agent of syphilis

a. T. pallidum b. T. pertenue
c. T. carateum d. T. endemicum

109. Spirochaelis are sensitive to

a. Penicillin
b. Chloramphenicols
c. Erythromycin
d. Tetracyclins

110. Specific test for syphilis is

a. VDRL test b. ELISA
c. FTA d. None of these

111. VDRL test is a

a. Agglutination test
b. Slide flocculation test
c. Precipitation test
d. None of these

112. The following characters are true about Neisseria gonorrhoeae except

a. Gram-negative, aerobic bacteria
b. Non-motile diplococci
c. Oxidase positive organisms
d. Air borne infection

113. Gonorrhoea is

a. Air borne disease
b. Water borne disease
c. Sexually transmitted venereal disease
d. Both a and c

114. Bartholin cyst is caused by

a. Candida b. Streptococcus
c. Staphylococcus d. Gonococcus

115. Neisseria gonorrhoeae causes

a. Urethritis b. Conjuctivitis
c. Arthritis d. All of the above

116. Virulence in gonococcus is due to

a. Pili b. Cell membrane
c. Its cellular location d. Cyclic enzymes

117. Japanese encephalitis is caused by

a. Toga Viruses b. Arbo Viruses
c. Para myxo Viruses d. Ortho myxo Viruses

118. In India, Japanese b encephalitis was first isolated from the mosquitoes of the

a. Culex tritaeriorhynchus
b. Culex annulirostris
c. Culex vishnui
d. None of these

119. Dengue virus is transmitted from man to man by the

a. Sand fly b. Ticks
c. Aedes aegypti d. Culex

120. Yellow fever is caused by

a. Bunya virus b. Calci virus
c. Arbo virus d. None of these

121. Vector for leishmaniasis is

a. Tick b. Mite
c. Sand fly d. Tsetse fly

122. Splenomegaly is an important manifestation of

a. Kala-agar b. Typhoid
c. Malaria d. All of these

123. Which of the following is most severly affected in Kala-azar?

a. Liver
b. Spleen
c. Adrenal gland
d. Bone marrow

124. In India, malaria most often spreads by

a. Anophels cucifacies
b. Anopheles fluvatis
c. Anopheles stephensi
d. Anopheles minimus

125. Man is intermediate host for

a. Guinea Worm b. Filaria
c. Malaria d. Kala-azar

126. Which of the following preferably infects reticulocytes?

a. P. ovale b. P.vivax
c. P.falciparum d. P.malaria

127. In which type of material parasite in the exoerythrocytic stage absent?

a. P.ovale b. P.vivax
c. P.falciparum d. P. malariae

128. In falciparum malaria, all of the following stages are seen except

a. Ring stage b. Schizont
c. Gametocyte d. None of these

129. Sporozite vaccine in malaria has

a. Induces antibodies
b. Prevents only asexual forms with reproduction
c. No effects on clinical illness
d. None of the above

130. Growing trophozoites and schizonts are not seen in the peripheral blood in malaria due to

a. P. falciparum b. P.vivax
c. P.ovale d. P. malaria

131. Thin blood smear for malaria is used to identify

a. Plasmodium b. Gametocytes
c. Type of parasite d. Schizont

132. The radical teatment of malaria is to half

a. Gametocyte
b. Exo-erythrocytic phase
c. Erythrocytic phase
d. All of these

133. Symptoms of acute aflatoxicosis

a. Osteogenic sarcoma
b. Lymphatic leukemia
c. Malaise & Anorexia
d. Both a and b

134. Most important Penicillium toxins are

a. Citrinin
b. Patulin
c. Penicillic acid
d. All of the above

135. Penicillic acid is produced by

a. A. ochraceus b. P. puberulum
c. Both a and b d. None of the above

136. Fungi producting mycelium are called

a. Moulds b. Filamentous fungi
c. Both a and b d. Yeasts

137. Candidiasis is caused by

a. Candida albicans b. Aspergillus spp.
c. E. floccosum d. M. audouinii

138. Candida albicans is capable to form

a. Single cells b. Pseudomonas
c. Multicellular forms d. None of these

139. Aspergillus fumigatus can infect

a. A. niger b. A. fumigatus
c. A. flavus d. A. oryzae

140. A.fumigates can produce

a. Endotoxins b. Exotoxins
c. Enterotoxins d. None of these

141. The drug of choice for dermal, oral and vaginal candidiasis is

a. Griseofulvin b. Amphotericin B
c. Gentian violet d. Nystatin

142. The following Penicillium species are pathogenic except

a. P. commune b. P. bicolor
c. P. glaucum d. P.notatum

143. Tinea versicolor is caused by

a. Candida albicans b. Malassezia furfur
c. Aspergillus niger d. None of these

144. Causative agent of Tinea nigra

a. Malassezia furfur
b. Exophiala werenekii
c. Candida albicans
d. Aspergillus flavus

145. Causative agent of African histoplasmosis

a. Histoplasma capsulatum
b. Histoplasma duboissi
c. Aspergillus niger
d. Aspergillus flavus

146. Sun ray fungus is

a. Actinomyces irraeli
b. Chromoblastomycosis
c. Streptomyces griseus
d. Cryptococcosis

147. Which agent on addition to a colony inhibits its growth and on removal the colony regrows is?

a. Bacteriostatic b. Bactericidal
c. Antibiotic d. Antiseptic

148. Griseofluvin is obtained from

a. Penicillium notatum
b. Streptomyces griseus
c. Penicillium griseofluvin
d. None of these

149. β-lactum ring is present in

a. Erythromycin b. Penicillin
c. Tetracyclins d. Chloramphenicol

150. All of the following drugs act on cell membrane, except

a. Novobiocin b. Nystatin
c. Chloromycetin d. Colicins

151. Cycloserine related to the amino acid in structure

a. Serine b. Aspergine
c. Alanine d. None of these

152. In Tuberculosis therapy mainly used antibiotic is

a. Penicillin b. Streptomycin
c. Chloramphenol d. Cycloserine

153. The antibacterial action of penicillin is due to its effect on

a. Cell membrane permeability
b. Cell wall synthesis
c. DNA synthesis
d. Protein synthesis

154. The antibiotic produced from Bacillus subtilis is

a. Vancomycin b. Bactiracin
c. Both a and b d. None of these

155. bacitracin sensitivity test is done for

a. Pneunocci
b. Group 'A' Streptococci
c. Gonococci
d. Staphylococci

156. The effect of antibiotics on micro organisms is mainly due to

a. Inhibition of cell-wall synthesis
b. Damage to the cytoplasmic membrane
c. Inhibition of nucleic acid and protein synthesis
d. All of the above

157. The antibiotic acting on cell wall is

a. Penicillin b. Bacitracin
c. Cyclosporin d. All of the above

158. Erythromycin belongs to chemical class of antibiotics

a. â-lactose b. Tetracyclines
c. Macrolides d. Aminoglycosides

159. Bacterial resistance to antibiotics is transmitted by

a. Transduction b. Transformation
c. Mutation d. Plasmids

160. Erythromycin inhibits protein synthesis by

a. Attaching to 30 S ribosome unit
b. Attaching to 50 S unit or ribosome
c. By the attachment to t-RNA
d. By the attachment to m-RNA

161. The function of (THFA) Tetrahydrofolic acid coenzyme include

a. Amino acid synthesis
b. Thymidine synthesis
c. Protein synthesis
d. Both a and b

162. Resistant to drugs in tuberculosis develops by

a. Transduction b. Transformation
c. Conjugation d. Mutation

163. Which of the following is penicillinase resistang acid labile penicillin?

a. Amoxycillin b. Cloxacillin
c. Carbenicillin d. Methicillin

164. Which of the following does not inhibit cell wall synthesis?

a. Penicillin b. Carbenicillin
c. Amikacin d. Vancomycin

165. The anti tumor antibiotics act by inhibiting

a. Cell wall synthesis
b. RNA synthesis
c. Cell membrane synthesis
d. The DNA structure & function

166. Drug resistance to sulphonamides is due to

a. Production of PABA
b. Folic acid synthetase
c. Drug alteration
d. Low affinity for drug synthesis by bacteria

167. Amoxycillin is combined with clavulanic acid to inhibit

a. DNA gyrace b. Cell synthesis
c. Protein synthesis d. β-lactamase enzymes

168. Drug of choice for methicillin resistant staph. Aureus is

a. Ampicillin b. Erythromycin
c. Neomycin d. Vancomycin

169. Nalidixic acid activity is due to

a. The inhibition of DNA synthesis
b. Inhibition of protein synthesis
c. The inhibition of cell wall synthesis
d. Both b and c

170. The best test for the susceptibility of a microorganism to antibiotics and other chemotherapeutic agents:

a. Tube-dilution test b. Paper-disc test
c. Both a and b d. None of these

171. The smallest amount of chemotherapeutic agents required to inhibit the growth of the organism in Vitro is known as

a. MIC (minimum inhibitory concentration)
b. Thermal death point (TDP)
c. Death rate
d. None of these

172. Clear-zones formation around antibiotic disc is due to

a. Growth of the bacterium surrounding of the disc
b. Lysis of the bacterial cells surrounding the disc
c. The destruction of paper disc (antibiotic)
d. None of these

173. Bacitracin is obtained from

a. B. subtilis b. B. anthracis
c. B. cereus d. B. anthracoid

174. Vancomycin is obtained from

a. Streptococcus species
b. Aspergillus niger
c. Streptomyces orientalis
d. Bacillus anthracis

175. â-lactum antibiotics are

a. Penicillin b. Cephalosporin
c. Both a & b d. None of these

176. Following are the test organisms used for the I.P microbiological assay of antibiotics match them correctly:

1. Rifampicin	A. Escherichia Coli
2. Tetracyclin	B. Klebsiella pneumonia
3. Streptomycin	C. Micrococcus luteus
4. Chloramphenol	D. Bacillus subtilis
	E. Bacillus cereus

177. The drugs mentioned below are produced by the species mentioned from Ato E. Match them correctly :

1. Rifampicin	A. Streptomyces griseus
2. Nystatin	B. Bacillus polymyxa
3. Amphotericin B	C. Streptomyces mediterranei
4. Candicidin	D. Streptomyces nodosus
	E. Streptomyces noursei

178. Match the correct method of sterilization listed A to E for the following drugs :

1.	Tetracyclin injection	A.	Sterilised by dry heat
2.	Insulin injection	B.	Sterilised by heating with a bacteria
3.	Quinine injection	C.	Sterilised by aseptic method
4.	Morphine injection	D.	Prepared by aseptic method
		E.	Sterilised by heating in an autoclave

179. Match the following rickettsial disease with their respective organisms:

1.	Epidemic typhus	A.	Rickettsia rickettsi
2.	Scrub typhus	B.	Rickettsia prowazeki
3.	Trench typhus	C.	Rickettsia typhus
4.	Murine typhus	D.	Rickettsia Quintana
		E.	Rickettsia typhus

180. Match the following antimicrobial with their respective side effects A to E:

1.	Acridines	A.	Showed adverse effects on proteins
2.	Benzalkonium chloride	B.	exhibit synergism and unsuitable for preservative in eye drops
3.	Parahydroxy benzoates	C.	Haemolytic
4.	Formalin	D.	Very toxic
		E.	Toxic to leucocytes and retard granulation process

181. Match the following antibiotics with their respective modes of administration A to E:

1.	Penicillin V	A.	Intramuscular suspension
2.	Benzathine penicillin	B.	Oral
3.	Methicillin sodium	C.	Both as oral and injection
4.	Ampicillin	D.	Locally applied
		E.	Intramuscular injection

182. Match the following antibiotics with respective strains A to E used for their production :

1.	Tetracyclin	A.	Streptomyces erythreus
2.	Chloramphenicol	B.	Streptomyces garyphalous
3.	Erythromycin	C.	Streptomyces niveus
4.	Cycloserine	D.	Streptomyces viridifaciens
		E.	Streptomyces venezuelae

183. Match the following strains with their respective produced antibiotics A to E:

1.	Streptomyces griseus.	A.	Oxytetracycline
2.	Streptomyces aureofaciens	B.	Neomycin sulphate
3.	Streptomyces rimosus	C.	Viomycin
4.	Streptomyces griseus var. purpurea	D.	Chlortetracycline
		E.	Streptomycin

184. Match the following antibiotics with their respective disease A to E to be cured :

1.	Streptomycin	A.	Staphylococcus infections
2.	Cycloserine	B.	Tuberculosis
3.	Novobiocin	C.	Fungal tuberculosis
4.	Griseofulvin	D.	Pulmonary tuberculosis
		E.	Anti-spirochaetes

185. Match the following antibiotics with their respective side effects A to E:

1.	Novobiocin	A.	Damages 8th cramial nerve
2.	Neomycin	B.	Damages CNS
3.	Cycloserine	C.	Damages haemopoietic system
4.	Chloramphenol	D.	Skin rashes
		E.	Kidney problems

186. Match the following antibiotics with their modes of action A to E:

1.	Tetracyclines	A.	Form an irreversible complex with sterols
2.	Erythromycin	B.	Chelation of light divalent salts
3.	Novobiocin	C.	Blocks protein synthesis
4.	Griseofulvin	D.	Interferes with the conjugation of bilirubin
		E.	Influences mitosis

187. Match the following dosage forms with their respective antibiotics A to E:

1.	Tablets	A.	Vancomycin Hcl
2.	Intravenous injection	B.	Colistin
3.	Capsules	C.	Polymixin B sulphate
4.	Intramuscular injection	D.	Gentamycin
		E.	Paromomycin sulphate

188. Match the following side effects with their respective antibiotics A to E:

1.	Nephrotoxic	A.	Triacetyloleandomycin
2.	Rashes	B.	Polymixin B sulphate
3.	Hypersensitivity	C.	Cephaloridine
4.	Gastric irritation	D.	Gentamycin
		E.	Sodium fusidate

189. Match the following antibiotics with their respective activity spectra A to E:

1.	Bacitracin	A.	Gram negative
2.	Gentamycin	B.	Mainly staphylococci
3.	Sodium fusidate	C.	Mainly Ps. Aeruginosa
4.	Framycetin	D.	Gram positive

190. Match the following enzymes with their activities A to E:

1.	Hyaluronidase	A.	Inactivate leucocytes and aid bacterial invasion
2.	Collagenase	B.	Reversibly catalyzes the breakdown of a major component
3.	Lecithinase	C.	Disintegrates a constituent of muscle, cartilage and bone
4.	Leucocidins	D.	Haemolysis of erythrocytes and the necrosis of other cells
		E.	Clots plasma and surrounds the bacteria

191. Match the following aggresins with their respective modes of action from A to E:

1.	Hyaluronidase	A.	Destroys RBC's and other tissues
2.	Haemolysis	B.	Breaks down connective tissues, increases permeability of tissue space
3.	Streptokinase	C.	Causes lysis of RBC's and other tissues
4.	Lecithinase	D.	Digest the fibrin of blood
		E.	Dissolves collagen

192. Match the following terms with their respective effects A to E:

1.	Brucella melitensis	A.	Causes trachoma, conjunctivitis and nongonococcal gamets
2.	Flavobacterium species	B.	Causes influenza like fever
3.	Chlamydia trachomatis	C.	Causes Malta fever in goats
4.	Leptospira icterohaemorrhagiae	D.	Contaminates pharmaceutical products
		E.	Weil's disease (jaundice)

193. Virus causing mumps is also responsible for

a. Measles b. Hepatitis A
c. Rabies d. Variola

194. Epidemic pleurodynia and myocarditis of new born infants are both caused by

a. Group B cox sack virus
b. Reovirus
c. Polyomavirus
d. Cytomegalovirus

195. Human papillomavirus causes following tumors:

a. Hepatic carcinoma
b. Cervical cancer
c. Condyloma acuminatum
d. Plantar wart

196. Viral infection is caused due to

a. Acute self limited illness
b. No apparent symptoms
c. Chronic infection with persistent viral shedding
d. All of these

197. Viruses which do not carry enzymes for DNA synthesis as a part of their virion are

a. Hepatitis B virus
b. Poxyviruses
c. Heepes simplex virus
d. Retroviruses
e. All of these

198. Following virus is known to establish latent infections:

a. Adeno virus b. Varicella-zoster virus
c. Cytomegalovirus d. Hepes simplex virus
e. All of these

199. Viruses which have teratogenic property are

a. Herpes simplex virus
b. Cytomegalovirus
c. Rubella virus
d. All of these

200. Kawasaki syndrome is

a. Most prevalent in Japan and Hawaii
b. Patients show rickettsia like bacteria in skin biopsies
c. Strain involved may be propionibacterium
d. All of these

201. Mode of action of quinolone antibiotics on growing bacteria was thought to be

a. Inhibition of â lactamase
b. Prevention of the cross linking of glycine
c. Inhibition of DNA gyrase
d. Inhibition of reverse transcriptase

202. The role that human play in the plague life cycle is

a. Secondary reservoir
b. Primary transmission vector
c. Primary host
d. Accidental intruder in rat flea cycle
e. None of these

203. Patient with presence of penile chancre should be advised by physician –

a. To take rest at home
b. To swab the chancre and culture on Thayer-Martin agar
c. To Gram stain the chancre fluid
d. To repeat VDRL test in 10 hours
e. Perform dark field microscopy for treponemes

204. Which organism is responsible for causing fever to a man dealing with goats?

a. Trepanema Pallidum
b. M.tuberculosis
c. Clostridium novyl
d. Brucella melitensis
e. None of these

205. Diphtheria toxins are produced from the strains of C.diphtheriae, which are

a. Encapsulated
b. Sucrose fermentors
c. Of the mitis and strain
d. Glucose fermentors
e. Lysogenic for β prophase

206. Skin of the healthy person has normal microbial flora which includes

a. Enterobacteriaceae
b. Aerobic diphtheria bacilli
c. Anaerobic diphtheriae bacilli
d. Nonhemolytic staphylococci
e. All of these

207. Which of the following organisms can infect humans if improperly cooked meat is used?

a. Trichinella spiralis
b. Taenia saginata
c. Taenia solium
d. Diphyllobothrium latum
e. Both a and c

208. The parasite related to ancylostoma duodenale is

a. Wuchereria bancrofti
b. Necatur americanes
c. Loa loa
d. Trichinella spiralis

209. Which of the following amoeba does not live in large intestine ?

a. Entamoeba coli
b. Entamoeda histolytica
c. Endolimax nana
d. Entamoeba gingivalis

210. Which of the following is not related to congenital syphilis?

a. Aneurysm
b. Saddle nose
c. Still birth
d. Hutchiso's teeth

211. Streptococcus pyogens produce infection –

a. Streptococcal sore throat
b. Acute glomerulo nephritis
c. Rheumatic fever
d. None of these

212. Salmonella which can cause prolong septicaemia.

a. Salmonella anetum
b. Salmonella cholerasuis
c. Salmonella typhimurium
d. Salmonella entritidis

213. E.coli produce which type of toxins?

a. Exotoxins b. Endotoxins
c. Leucocidin d. Both a and b

214. Main causative organism of gas gangrene is

a. B.anthrax b. Clostridium tetani
c. Cl.deficile d. Cl.perfringens

215. Causative organism of whooping cough is

a. Bordetella pertussis
b. Bordetella parapertussis
c. Bordetella bronchi septica
d. None of these

216. Pfeiffer phenomenon is related to

a. Vibrio cholerae b. B.anthrax
c. Rickettsial pox d. All of these

217. Diagnostic test for the identification of primary syphilis:

a. VDRL test
b. Treponema pallidum immobilization test
c. Kahn's test
d. Dark ground microscopic examination

218. Sporadic summer diarrhea may be caused by

a. E.coli b. Enterobacter
c. Hafnia d. Serratia

219. Biological false reaction in VDRL is related to

a. Lepra bacilli
b. Corynebacterium diphtheria
c. Cl.welchi
d. None of these

ANSWERS

1. d	2. b	3. a	4. c	5. c	6. b
7. a	8. b	9. a	10. a	11. b	12. b
13. b	14. d	15. d	16. c	17. b	18. d
19. a	20. c	21. b	22. c	23. d	24. c
25. b	26. a	27. d	28. d	29. d	30. c
31. d	32. c	33. b	34. b	35. a	36. d
37. a	38. a	39. c	40. c	41. c	42. b
43. d	44. c	45. b	46. a	47. d	48. d
49. b	50. a	51. a	52. d	53. a	54. b
55. a	56. c	57. b	58. e	59. a	60. c
61. a	62. b	63. c	64. b	65. b	66. d
67. a	68. d	69. b	70. a	71. c	72. c
73. d	74. d	75. d	76. c	77. b	78. a
79. c	80. a	81. a	82. a	83. b	84. c
85. b	86. d	87. b	88. b	89. c	90. d
91. c	92. a	93. b	94. d	95. c	96. a
97. a	98. d	99. c	100. b	101. b	102. c
103. a	104. b	105. c	106. a	107. a	108. a
109. b	110. a	111. b	112. d	113. c	114. d
115. d	116. a	117. b	118. c	119. c	120. c
121. c	122. d	123. b	124. a	125. c	126. b

127. c	128. b	129. a	130. a	131. c	132. c
133. d	134. d	135. c	136. a	137. a	138. b
139. d	140. a	141. c	142. d	143. b	144. b
145. b	146. a	147. a	148. c	149. b	150. d
151. c	152. d	153. b	154. b	155. b	156. d
157. d	158. c	159. d	160. b	161. d	162. d
163. d	164. c	165. d	166. b	167. d	168. d
169. a	170. c	171. a	172. b	173. a	174. c

175. c 176. 1.d, 2.e, 3.a, 4.a 177. 1.c, 2.e, 3.d, 4.b

178. 1.d, 2.c, 3.e, 4.b 179. 1.b, 2.c, 3.d, 4.e 180.1.e,2.c,3.b,4.a

181. 1.b, 2.a, 3.e, 4.c 182. 1.d, 2.e, 3.a, 4.b 183. 1.e, 2.d, 3.a, 4.c

184.1.b,2.d,3.a,4.c 185. 1.d, 2.e, 3.b, 4.c 186. 1.b, 2.c, 3.d, 4.e

187. 1.b, 2.a, 3.e, 4.c 188.1.b,2.c,3.a,4.e 189. 1.e, 2.a, 3.d, 4.b

90. 1.b, 2.c, 3.d, 4.a 191. 1.b, 2.a, 3.d, 4.c 192.1.c,2.b,3.a,4.e

193. a	194. a	195. a	196. d	197. e	198. e
199. d	200. d	201. c	202. d	203. e	204. d
205. e	206. e	207. e	208. b	209. d	210. a
211. a	212. b	213. d	214. d	215. a	216. a
217. d	218. a	219. a			

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CHAPTER 10

INDUSTRIAL MICROBIOLOGY

1. The best medium for the production of Penicillin is

a. Nutrient agar b. Corn steep liquor
c. Sulfite waste liquor d. Whey

2. Industrially important Antibiotic producing organisms shall be isolated by

a. Disk plate method
b. Direct plate method
c. Serial dilution method
d. Crowded plate method

3. Industrial alchohol will be produced by using starter culture

a. Top yeast b. Middle yeast
c. Bottom yeast d. Feeder yeast

4. Pyruvate decarboxylase acetaldehyde + CO_2 = This reaction is specially observed in

a. Lactic acid fermentors
b. Ethanol fermentors
c. Algae
d. Plants

5. The pyruvate, dehydrogenase → multienzyme complex does not occur in

a. Aerobic bacteria
b. Microphilic bacteria
c. Facultative anaerobic bacteria
d. Strictly anaerobic bacteria

6. A major ingradient of penicillin production media is

a. Corn meal b. Corn steep liquor
c. Cane steep liquor d. None of these

7. the outstanding example of traditional microbial fermentation product is

a. Vinegar b. Penicillin
c. Citric acid d. Tetracyclin

8. Which of the following involves the formation of nitrate from ammonia

a. Ammonification b. Denitrification
c. Nitrification d. Nitrogen fixation

9. First genetically engineered and biotechnologically produced vaccine was against

a. AIDS b. Small pox
c. Herpes simplex d. Hepatitis B.

10. one of the standard cloning vector widely used in gene cloning is

a. Ti pasmid b. EMBL 3
c. pBR 322 d. EMBL 4

11. In alchoholic fermentation, CO_2 is evolved during

a. Decarboxylatin of pyruvic acid
b. Formation of acetaldehyde
c. Oxidation of acetaldehyde
d. Both a and b

12. In the industrial production of streptomycin, the secondary metabolite or by-products is

a. Vitamin – B_{12} b. Vitamin – C
c. Vitamin – B_6 d. Ethanol

13. Tobacco and tea leaves are fermented to give flavour and taste. This type of fermentation is known as

a. Alcohol fermentation
b. Curing
c. Degradation
d. Lactic acid fermentation

14. Vinegar fermentation involves

a. Yeasts only
b. Yeasts with lactic bacteria
c. Yeasts with acetic acid bacteria
d. Yeasts with butric acid bacteria

15. Carcinoma refers to

a. Malignant tumours of the connective tissue
b. Malignant tumors of the skin or mucous membrane
c. Malignant tumours of the colon
d. Malignant tumors of the connective tissue

16. By-product of acetone-butanol fermentation include

a. Riboflavin b. Penicillin
c. Isopropanol d. All of these

17. Transgenic animals are for improvement of the quality of

a. Milk b. Meat
c. Eggs d. All of the above

18. Thermo resistant bacteria are important in the preservation of foods by

a. Freezing b. Canning
c. Chemicals d. Irradiation

19. The fungus used in the industrial production of citric acid:

a. Rhizopus Oryzac
b. Fusarium moniliformae
c. Rhizopus nigricans
d. Aspergillus nigricans

20. Penicilin is commercially produced by

a. P.notatum b. P.chrysogenum
c. P.citrinum d. P.roquefortii

21. The most commonly used microorganism in alchohol fermentation is

a. A spergilus niger
b. Bacillus subtilis
c. Sacharomyces cerevisiae
d. Escherichia coli

22. Vitamin B_{12} can be estimated and determined by using organism

a. Lactobacillus sps
b. Lactobacillus Leichmanni
c. Bacillus subtilis
d. E.Coli

23. Batch fermentation is also called

a. Closed system
b. Open system
c. Fed-Batch system
d. Sub-merger system

24. To differentiate lactose and non-lactose fermentors the medium used is

a. Mac Conkey's medium
b. Stuart's medium
c. Sugar medium
d. Citrate medium

25. The micro-organism useful for fermentation are

a. Bacteria b. Yeast
c. Fungi d. None of these

26. Industrial microbiology, mainly depends on the phenomenon

a. Pasteurisation b. Fermentation
c. Vaccination d. Both b and c

27. Streptokinase is also termed as

a. Fibrionolysin b. Catalase
c. Coagulase d. Hyaluronidase

28. Streptokinase is produced by

a. Staphylococcus aureus
b. Streptococcus pneumoniae
c. Str. faecalis
d. Str. pyogenes

29. Large vessel containing all the parts and condition necessary for the growth of desired microorganisms is called

a. Bio reactor b. Auto reactor
c. Impeller d. None of these

30. Basic principle in industrial microbiology is

a. Suitable growth conditions
b. Fermentation
c. Providing aseptic conditions
d. All of these

31. For thorough mixing of medium of medium and inoculum the part of fermentor useful is

a. Shaft b. Headspace
c. Impeller d. Sparger

32. Infermentor the top portion left without broth is called

a. Shaft b. Head space
c. Impeller d. Sparger

33. Over heating of fermentator during fermentation is controlled by

a. Cooling jacket b. Steam
c. Cool air d. None of these

34. Antifoam agent is

a. Silicon compounds b. Corn oil
c. Soyabean oil d. All of these

35. The capacity of laboratory fermentors is

a. 12–15 liters b. 2000 gallons
c. 500 liters d. 10000 gallons

36. For the production of ethanol the raw material used is

a. Molasses
b. Cellulose
c. Sulphite waste liquor
d. None of these

37. Different methods of strain improvement are

a. Protoplast fusion
b. Recombinant DNA technique
c. Genetic recombination
d. All of these

38. Protoplasts can be prepared from

a. Gram positive bacteria
b. Gram negative bacteria
c. Both a & b
d. None of these

39. Upto the production of desirable production in the fermentor is called

a. Upstream process
b. Downstream process
c. Surface fermentation
d. None of these

40. The purification and recovery of the production after fermentation is called

a. Upstream process
b. Downstream process
c. Surface fermentation
d. None of these

41. If the microorganisms are allowed to nutrient medium is called

a. Submerged fermentation
b. Surface fermentation
c. Dual fermentation
d. All of these

42. Submerged fermentations are

a. Batch fermentation
b. Continuous fermentation
c. Both a and b
d. None of these

43. Batch fermentation is also called

a. Closed system b. Open system
c. Fed-batch system d. None of these

44. If more than one microorganism is used to obtain the required product, that type of fermentation is called

a. Batch b. Continuous
c. Dual d. Fed-batch

45. L. lysine is produced from

a. Coryne bacterium glutamicum
b. Corynebacterium sps.
c. Mycobacterium sps.
d. None of these

46. Methods used to get immobilized enzymes:

a. Adsorption b. Encapsulation
c. Covalent bonding d. All of these

47. Raw-material used for the production of alcohol is

a. Molasses
b. Starch
c. Sulphite waste water
d. All of these

48. Microorganisms used for alcohol production

a. Saccharomyces sereviceae
b. Bacillus subtilis
c. Penicillium chrysogenum
d. None of these

49. For streptomycin production the micro-organisms required are

a. Streptomyces griseus
b. Streptomyces niger
c. Saccharomyces cereviceae
d. All of these

50. The by-product during streptomycin production is

a. Vitamin A b. Proline
c. Vitamin B_{12} d. None of these

51. For acetic acid production the methods followed are

a. Orleans process
b. Rapid process
c. Submerged process
d. All of these

52. For amylase production the micro organism required is

a. B. subtilis b. S. cereviceae
c. A. nigar d. None of these

53. Pectinase is industrially produced from

a. S.cereviceae b. Trichoderma Koningi
c. A. nigar d. None of these

54. Cellulose are produced from

a. S.cereviceae b. Trichoderma Koningi
c. A. nigar d. None of these

55. Industrial Production of Vitamin-B12 is from

a. Propionibacterium sps.
b. Pseudomonas sps.
c. Both a and b
d. None of these

56. Clostridium acetobutylicum is used for the production of

a. Acetone - Butanol b. Ethanol
c. Vitamin-B12 d. None of these

57. In the production of ethanol industrially the yeast used is

a. K.pneumoniae b. Kluyreromyces fragilis
c. S. cerevisiae d. Both b and c

58. Citric acid is used as

a. Flavouring agent in food
b. As an antioxident
c. As preservative
d. All of the above

59. Citric acid is produced in aerobic conditions by the fungi

a. Aspergillus b. Penicillin
c. Mucor d. All of these

60. The raw material for citric acid production is

a. Corn b. Molasses
c. Starch d. None of these

61. Aspergillus niger is used generally for the production of

a. Ethanol b. Penicillin
c. Citric acid d. Lactic acid

62. In the citric acid production, the pH to be maintained in the fernmenter is

a. 7.0 b. 5.0 to 6.0
c. 8.0 to 9.0 d. 1.0 to 6.0

63. The required temperature for the production of citric acid is

a. 10°C – 80°C b. 30°C – 50°C
c. 20°C – 50°C d. 25°C – 30°C

64. The penicillin produced in large scale submerged fermentations are

a. Penicillin-A b. Penicillin-D
c. Penicillin-G d. None of these

65. The strain of fungi used for the large scale production of penicillin is

a. Penicillium chrysogenum
b. P-notatum
c. Streptomyces Aurecus
d. Saccharomyces sps

66. 6-amino penicillic acid is prepared from penicillin sps by

a. Acylase
b. Punicillin acylase
c. Penicillinone
d. None of these

67. The pH, to be maintained for the production of penicillin is

a. 7.5 b. 6.5
c. 8.0 d. 5.0

ANSWERS

1. b	2. d	3. c	4. b	5. b	6. b
7. a	8. c	9. b	10. c	11. d	12. a
13. b	14. c	15. d	16. a	17. d	18. b
19. d	20. b	21. a	22. b	23. a	24. a
25. b	26. b	27. a	28. d	29. a	30. b
31. c	32. b	33. a	34. d	35. a	36. c
37. d	38. b	39. b	40. b	41. b	42. c
43. a	44. c	45. a	46. d	47. d	48. a
49. a	50. c	51. d	52. a	53. c	54. b
55. c	56. b	57. d	58. d	59. d	60. a
61. c	62. b	63. d	64. c	65. a	66. b
67. b					